

#5 1/2

PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0851-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Please type a plus sign (+) inside this box → ☒

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**TRANSMITTAL FORM**  
(to be used for all correspondence after initial filing)

**RECEIVED**  
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Application Number	09/643,697
Filing Date	August 22, 2000
First Named Inventor	Richard D. Bednar, et al.
Group Art Unit	3671
Examiner Name	
Attorney Docket Number	7D16R-000015/CPB

Total Number of Pages in This Submission

**ENCLOSURES (check all that apply)**

<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input checked="" type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input checked="" type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Acknowledgement Postcard; Statement of Lack of Deceptive Intention; Declaration and Power of Attorney; Assent Of Assignee To Addition Of Inventors; Establishment of Assignee's Right to Prosecute Application Under 37 C.F.R. §3.73(b) and Power of Attorney;
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Remarks: The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 08-0750. A duplicate copy of this sheet is enclosed.

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm or Individual name	Harness, Dickey & Pierce, P.L.C.
Signature	<i>David P. Utyanski</i>
Date	March 5, 2001

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date: March 5, 2001

Typed or printed name	David P. Utyanski, Reg. No. 30,952	Date	March 5, 2001
Signature	<i>David P. Utyanski</i>		

PTO/SBHT (11-00)  
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**OFFICE OF PATENT & TRADEMARK**  
**OFFICE OF PETITIONS**

**PTO FEE TRANSMITTAL**  
**for FY 2001**  
Fees are subject to annual revision.

**TOTAL AMOUNT OF PAYMENT (\$)** 170

**Application Number** 00843,697  
**Filing Date** August 22, 2000  
**First Named Inventor** Richard D. Bednar, et al.  
**Examiner Name**  
**Group / Art Unit** 3781  
**Attorney Docket No.** 70164-444-000015/CPB

**METHOD OF PAYMENT (check one)**  
The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:  
1. ☐ Deposit Account Number: 08-0750  
Deposit Account Name: Harness, Dickey & Pierce, P.L.C.  
☒ Charge Any Additional Fee Required Under 37 CFR 1.18 and 1.17  
☐ Applicant claims small entity status. See 37 CFR 1.27  
2. ☒ Payment Enclosed:  
☒ Check ☐ Credit Card ☐ Money Order ☐ Other

**FEE CALCULATION**

**1. BASIC FILING FEE**

Large Fee Code	Entity (\$)	Small Fee Code	Entity (\$)	Fee Description	Fee Paid
101	710	201	355	Utility filing fee	
106	320	206	160	Design filing fee	
107	490	207	245	Plant filing fee	
108	710	208	355	Reissue filing fee	
114	150	214	75	Provisional filing fee	
<b>SUBTOTAL (1)</b>					<b>(5) 0</b>

**2. EXTRA CLAIM FEES**

Total Claims	Extra Claims	Fee from below	Fees Paid
Independent Claims	0	0	0
Multiple Dependent	0	0	0

**3. ADDITIONAL FEES**

Large Fee Code	Entity (\$)	Small Fee Code	Entity (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
136	130	136	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	620	112	620	Requesting publication of SIR prior to Examiner action	
113	1,840	113	1,840	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	380	216	195	Extension for reply within second month	
117	830	217	415	Extension for reply within third month	
118	1,390	218	695	Extension for reply within fourth month	
129	1,890	229	945	Extension for reply within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,610	138	1,610	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,240	241	620	Petition to revive - unintentional	
142	1,240	242	620	Utility issue fee (for reissue)	
143	440	243	220	Design issue fee	
144	600	244	300	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	130
123	130	123	130	Petitions related to provisional applications	
128	180	128	180	Submission of Information Disclosure Sheet	
581	40	581	40	Recording each patent assignment per property (times number of properties)	40
146	710	246	355	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	710	249	355	For each additional invention to be examined (37 CFR § 1.129(b))	
179	710	279	355	Request for Continued Examination (RCE)	
168	600	168	300	Request for expedited examination of a design application	
Other fee (specify)					
*Reduced by Basic Filing Fee Paid					
<b>SUBTOTAL (3)</b>					<b>(5) 170</b>

\*For number previously paid, if greater; For Reissues, see above

**SUBMITTED BY**

Name (Print/Type)	Registration No. Attorney/Agent	39,052	Telephone	248-641-1225
David P. Urydzanski				
Signature	Date		March 5, 2001	

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-3538.

**Burden Hour Statement:** This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

JA - 0452



Attorney Docket No. 7016R-000015/CPB

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED

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OFFICE OF PETITIONS

Group Art Unit: 3671 )  
Examiner: To Be Assigned )  
Serial No.: 09/643,697 )  
Inventor(s): Richard D. Bednar, et al. )  
Filed: August 22, 2000 )  
For: Gang-Type Rotary Lawn Mower )  
Attorney Docket: 7016R-000015/CPB )

AMENDMENT TO  
CORRECT NAMING  
OF INVENTORS  
PURSUANT TO  
37 C.F.R. § 1.48(a)

Hon. Commissioner  
of Patents and Trademarks  
Washington, D.C. 20231

Sir:

1. Applicant hereby requests to correct the inventorship in the Declaration as set forth and filed on August 22, 2000, which originally incorrectly named the inventor(s). Please add the following previously unnamed person as inventor on this application:

Randal S. Knurr  
403 North Water Street  
Waterford, WI 53185  
Citizenship: U.S.A.

37 C.F.R. §1.48(a)(1).

2. Attached in support of this Amendment is:

(a) A statement from each person being added as an inventor that the error in inventorship occurred without deceptive intention on his or her part. 37 C.F.R.

§1.48(a)(2).

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130.00 DP

JA - 0453

Serial No. 09/643,697  
Attorney Docket No. 7016R-000015/CPB

(b) A declaration by the actual inventor (s) as required by §1.63 or as permitted by §§1.42, 1.43 or §1.47. 37 C.F.R. §1.48(a)(3).

(c) A check for \$130.00 is enclosed for the processing fee set forth in §1.17(i). 37 C.F.R. §1.48(a)(4).

(d) Written consent of the assignee (including executed Establishment of Assignee's Right to Prosecute Application and Power of Attorney document). 37 C.F.R. §1.48(a)(5).

Please charge any additional fees or credit any over payment pursuant to 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 08-0750.

Respectfully submitted,

Dated: 3/5/01

By: David P. Utykowski  
David P. Utykowski, Reg/No. 39,052  
Attorney for Applicants

HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. Box 828  
Bloomfield Hills, Michigan 48303  
(248) 641-1600  
DPU/vle



Attorney Docket No. 7016R-000015/CPB

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STATEMENT OF  
LACK OF DECEPTIVE  
INTENTION

Group Art Unit: 3671  
Examiner: To Be Assigned  
Serial No.: 09/643,697  
Inventor(s): Richard D. Bednar, et al.  
Filed: August 22, 2000  
For: Gang-Type Rotary Lawn Mower  
Attorney Docket: 7016R-000015/CPB

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

This statement is to verify that the error in inventorship which occurred in the  
above-identified application was without deceptive intention on my part.

Date: 2-26-01

By: Randal S. Knurr  
Randal S. Knurr, Added Inventor

JA - 0455



Attorney Docket No. 7016R-000015/CPB

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MAR 15 2001

OFFICE OF PETITIONS

Group Art Unit: 3671  
Examiner: To Be Assigned  
Serial No.: 09/643,697  
Inventor(s): Richard D. Bednar, et al.  
Filed: August 22, 2000  
For: Gang-Type Rotary Lawn Mower  
Attorney Docket: 7016R-000015/CPB

ESTABLISHMENT OF  
ASSIGNEE'S RIGHT  
TO PROSECUTE  
APPLICATION UNDER  
37 C.F.R. § 3.73(b) AND  
POWER OF ATTORNEY

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

Under 37 C.F.R. § 3.73 (b), the undersigned hereby establishes the below-named  
Assignee's ownership in the above-identified Application:.

Assignee: Textron, Inc.  
40 Westminster Street  
Providence, Rhode Island 02903

The documentary evidence of a chain of title from the original owner to the  
Assignee is provided in the Assignment Documents:

☒ filed herewith.  
☒ Previously filed,  
Reel No. 011263, Frame No. 0704.

I hereby declare that all statements made herein of my own knowledge are true,  
and that all statements made on information and belief are believed to be true; and further  
that these statements are made with the knowledge that willful false statements, and the


JA - 0456

Serial No. 09/643,697  
Attorney Docket No. 7016R-000015/CPB

like so made, are punishable by fine or imprisonment, or both, under Section 1001; Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Assignee furthermore hereby appoints David P. Utykanski, Reg. No. 39,052, and each other principle, attorney of counsel, associate and employee of Harness, Dickey & Pierce, P.L.C., who is a registered Patent Attorney, as attorney of record, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. I request the Patent and Trademark Office to direct all correspondence and telephone calls relative to this application to Harness, Dickey & Pierce, P.L.C., P.O. Box 828, Bloomfield Hills, Michigan 48303 (telephone 248-641-1600).

The undersigned (whose title is supplied below) is empowered to sign this certificate on behalf of the assignee.

By:   
Name: THOMAS G. STUART  
Title: V.P. ENGINEERING  
Assignee: Textron, Inc.

Date: 2-25-01



Attorney Docket No. 7016R-000015/CPB

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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MAR 15 2001

OFFICE OF PETITIONS

Group Art Unit: 3671 )  
Examiner: To Be Assigned )  
Serial No.: 09/643,697 )  
Inventor(s): Richard D. Bednar, et al. )  
Filed: August 22, 2000 )  
For: Gang-Type Rotary Lawn Mower )  
Attorney Docket: 7016R-000015/CPB )

ASSENT OF  
ASSIGNEE TO  
ADDITION OF  
INVENTORS

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

Assignee:

Textron, Inc.  
40 Westminster Street  
Providence, Rhode Island 02903

Assignee hereby assents to the correction of inventorship filed herewith.  
Documentary evidence of a chain of title from the original owner to the assignee is  
recorded in the Assignment records of the office on reel 011263, frame 0704.

A statement under 37 C.F.R. § 3.73 (b) is attached.

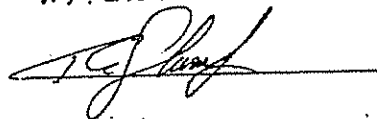
JA - 0458



Serial No. 09/643,697  
Attorney Docket No. 7016R-000015/CPB

Date: 2-25-01

By: THOMAS G. STUART  
V. P. ENGINEERING

A handwritten signature in black ink, appearing to read 'T. G. Stuart', written over a horizontal line.

(Type or print name and title of person  
authorized to sign on behalf of assignee)

Please type or print plus sign (+) inside this box → ☒

Approved for use through 10/31/2002. OMB 0551-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing)	Application Number	09/643,697	
	Filing Date	August 22, 2000	
	First Named Inventor	Richard D. Bednar, et al.	
	Group Art Unit	3671	
	Examiner Name		
Total Number of Pages in This Submission	5	Attorney Docket Number	7016R-000015/CPB

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Acknowledgement Postcard
Remarks		The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 08-0750. A duplicate copy of this sheet is enclosed.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Harness, Dickey & Pierce, P.L.C.
Signature	<i>David P. Utyanski</i>
Date	February 22, 2001

CERTIFICATE OF MAILING	
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date: February 22, 2001	
Typed or printed name	David P. Utyanski
Signature	<i>David P. Utyanski</i>
Date	February 22, 2001

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

JA - 0460



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B

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/643,697  
Filing Date: August 22, 2000  
Applicant: Richard D. Bednar, et al.  
Group Art Unit: 3671  
Examiner: To be assigned  
Title: Gang-Type Rotary Lawn Mower  
Attorney Docket: 7016R-000015/CPB

PRELIMINARY  
AMENDMENT

RECEIVED  
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Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

Applicants respectfully request a change in the TITLE of the invention. Please amend the above-identified application specification as follows. Applicants include herewith an Attachment for Specification Amendments showing amendments in which underlines indicate insertions and brackets indicate deletions.

IN THE SPECIFICATION

Please amend the TITLE of the invention as follows:

GANG-TYPE ROTARY LAWN MOWER WITH MULTIPLE REAR ROLLERS

JA - 0461

CONCLUSION

Prompt and favorable consideration of this amendment is respectfully requested.

Please charge any fees or credit any overpayment pursuant to 37 CFR § 1.16 or § 1.17 to Deposit Account No. 08-0750.

Respectfully submitted,

Dated: Feb. 22, 2001

By: David P. Utykapski  
David P. Utykapski, Reg. No. 39,052  
Attorney for Applicants

HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. Box 828  
Bloomfield Hills, Michigan 48303  
(248) 641-1600  
DPU/vie

Serial No. 09/643,697

Page 2


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**ATTACHMENT FOR SPECIFICATION AMENDMENTS**  
U.S. Serial No. 09/643,697, Filed August 22, 2000  
Attorney Docket No. 7016R-000015/CPB  
(underlines indicate insertions and brackets indicate deletions)

The TITLE of the invention has been amended as follows:

GANG-TYPE ROTARY LAWN MOWER WITH MULTIPLE REAR ROLLERS

<b>Notice of Allowability</b>	Application No. 09/643,697	Applicant(s) Bednar et al
	Examiner Robert E Pezzuto	Art Unit 3671



*--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application filed August 22, 2000
2. ☒ The allowed claim(s) is/are 1-27
3. ☒ The drawings filed on Aug 22, 2000 are acceptable as formal drawings.
4. ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

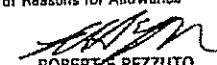
5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
 Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. THIS THREE-MONTH PERIOD IS NOT EXTENDABLE FOR SUBMITTING NEW FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION. This three-month period for complying with the REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL is extendable under 37 CFR 1.136(a).
6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
7. ☐ Applicant MUST submit NEW FORMAL DRAWINGS
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
 1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_
  - (b) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the examiner.
  - (c) ☐ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No. \_\_\_\_\_

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

<b>Attachment(s)</b> 1 <input type="checkbox"/> Notice of References Cited (PTO-892) 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 5 <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449), Paper No(s). <u>5</u> 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material 9 <input type="checkbox"/> Other	2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ 6 <input type="checkbox"/> Examiner's Amendment/Comment 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance
---	--

  
**ROBERT E PEZZUTO**  
 PRIMARY EXAMINER  
 ART UNIT 3671



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

# NOTICE OF ALLOWANCE AND ISSUE FEE DUE

PM82/0928

HARNES DICKY & PIERCE PLC  
PO BOX 828  
BLOOMFIELD HILLS MI 48303

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/643,697	08/22/00	027	PEZZUTO, R	3671, 09/28/01
First Named Applicant	BEDNAR,	35 USC 154(b) term ext. =	0 Days.	

TITLE OF INVENTION GANG-TYPE ROTARY LAWN MOWER WITH MULTIPLE REAR ROLLERS

ATTYS DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2	7016R-000015	056-006,000	M74 UTILITY	NO	\$1240.00	12/28/01

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

## HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

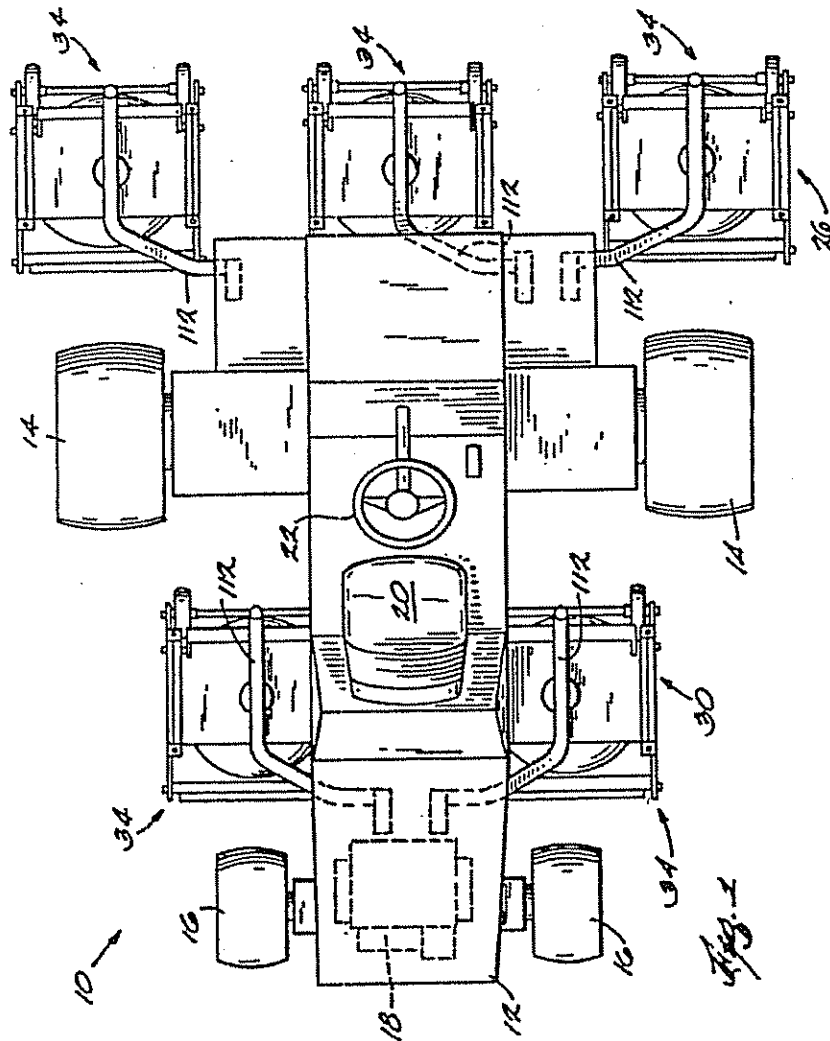
PATENT AND TRADEMARK OFFICE COPY

PTOL-65 (REV. 10-98) Approved for use through 06/30/99. (0651-0033)

JA - 0465

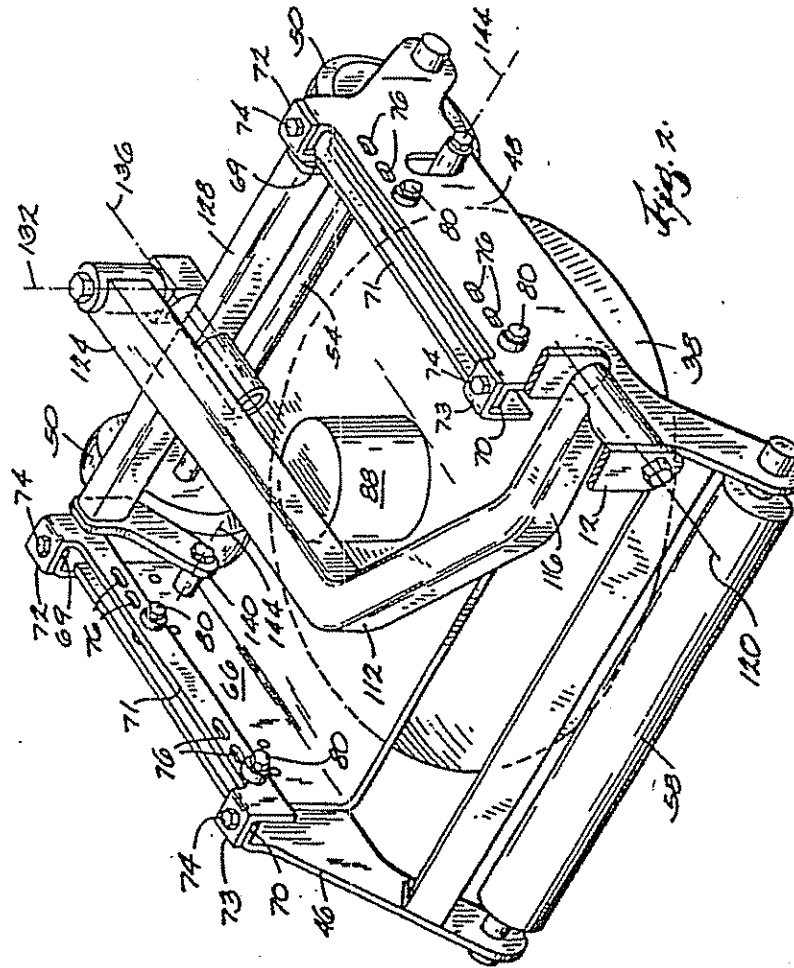
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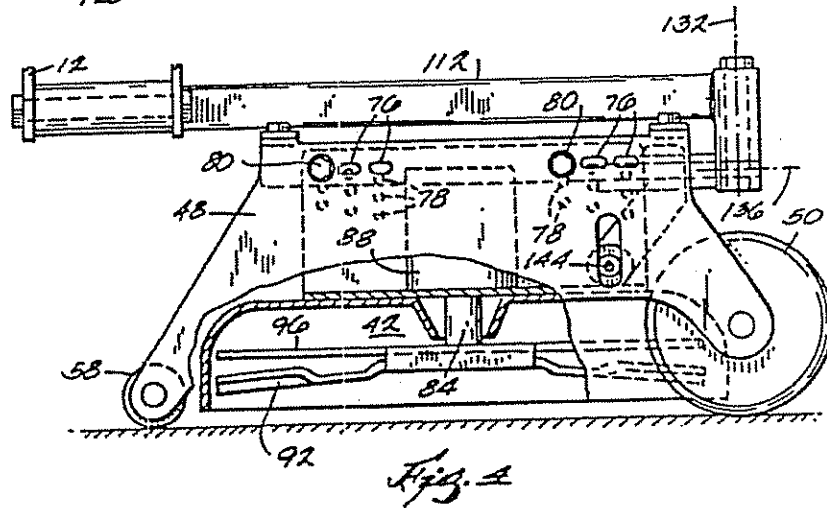
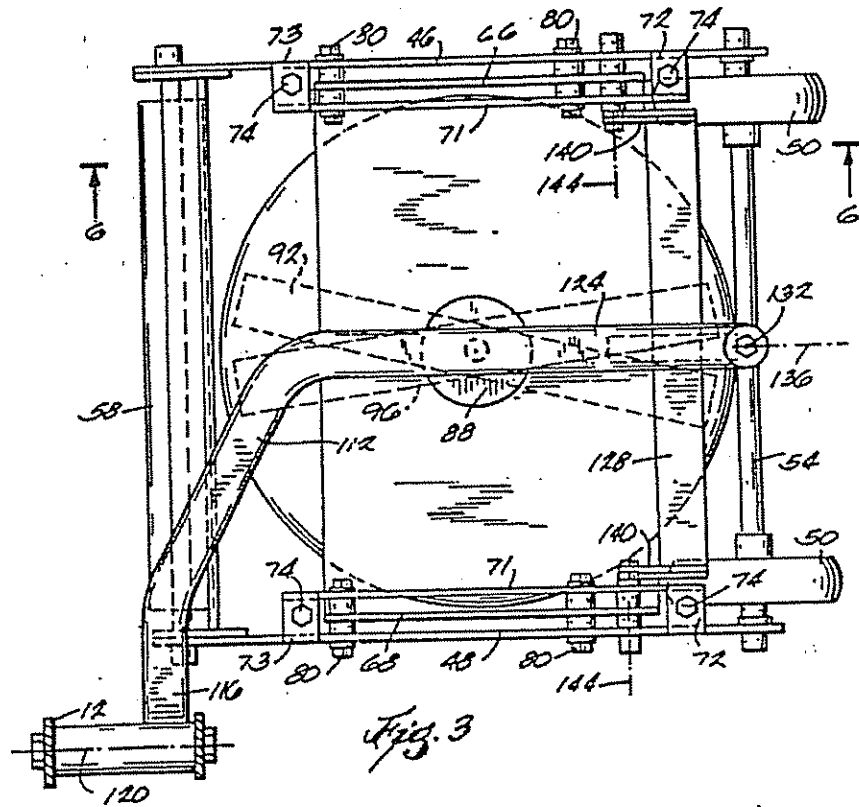


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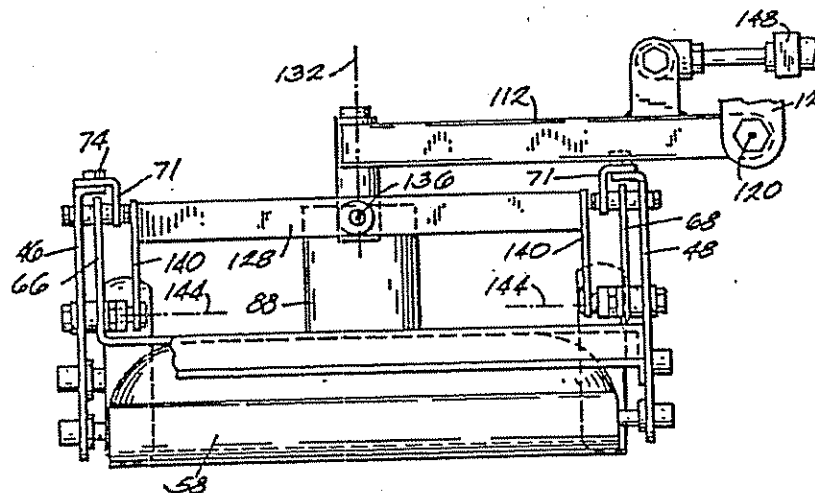
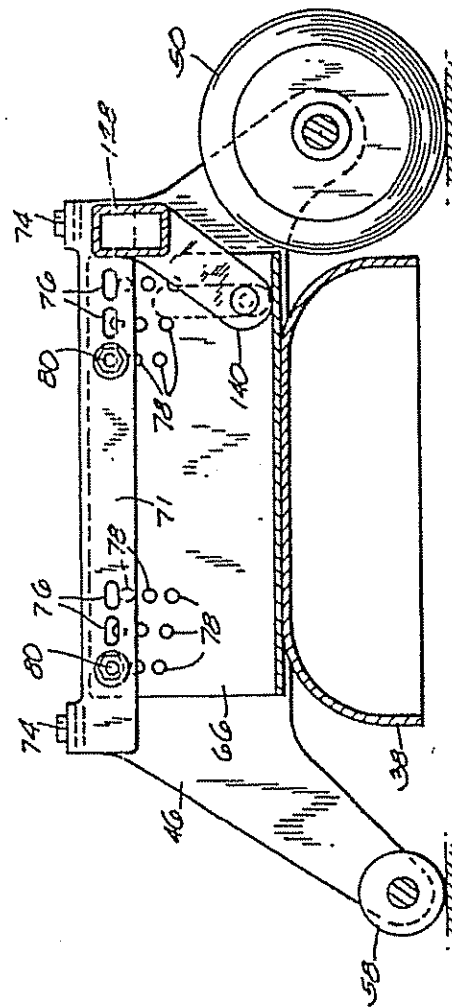
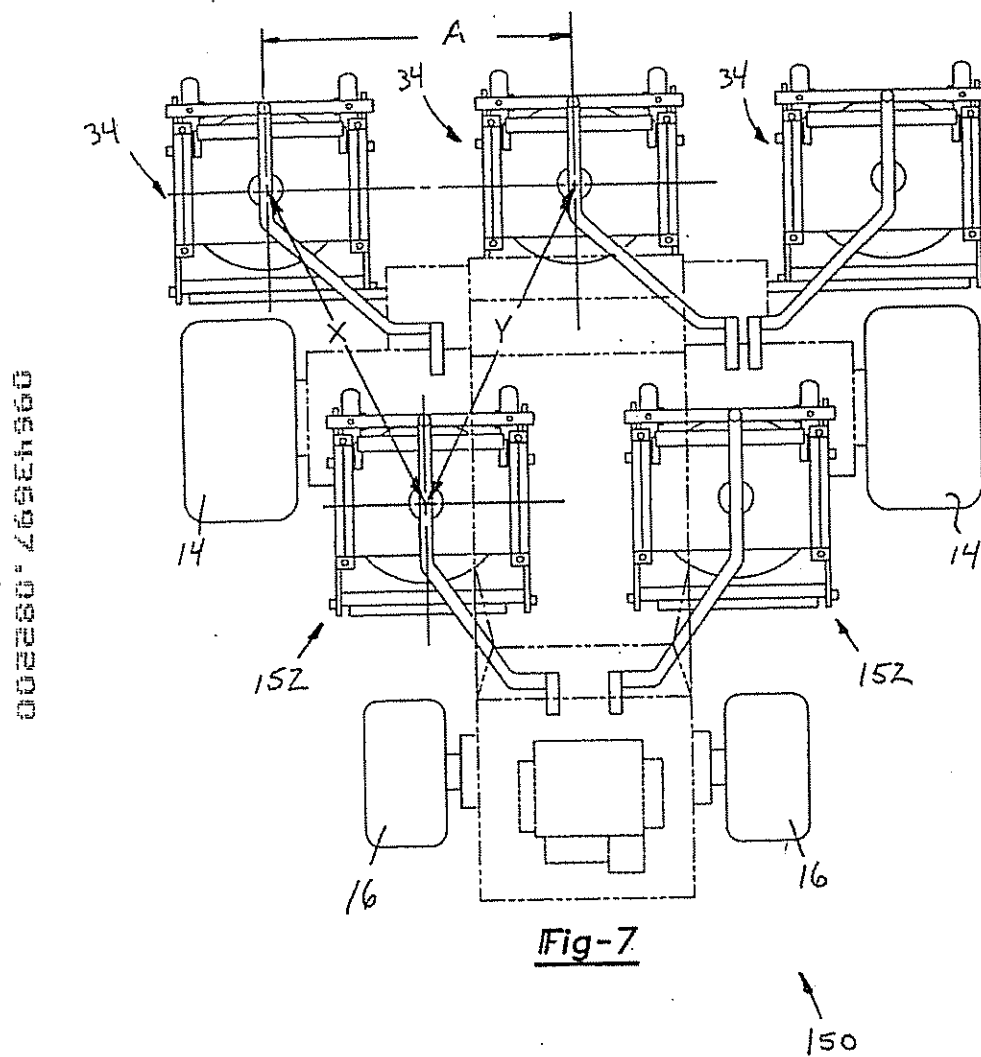


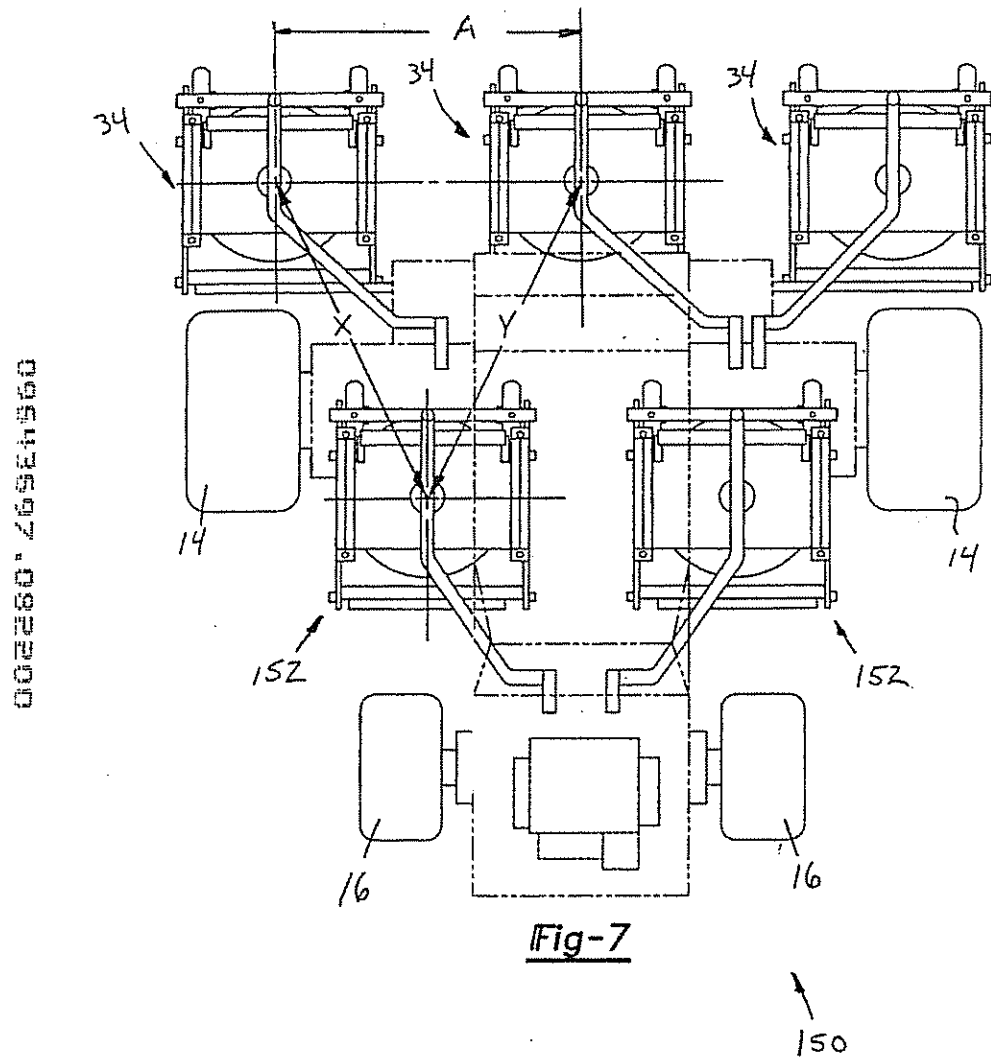
Fig. 5

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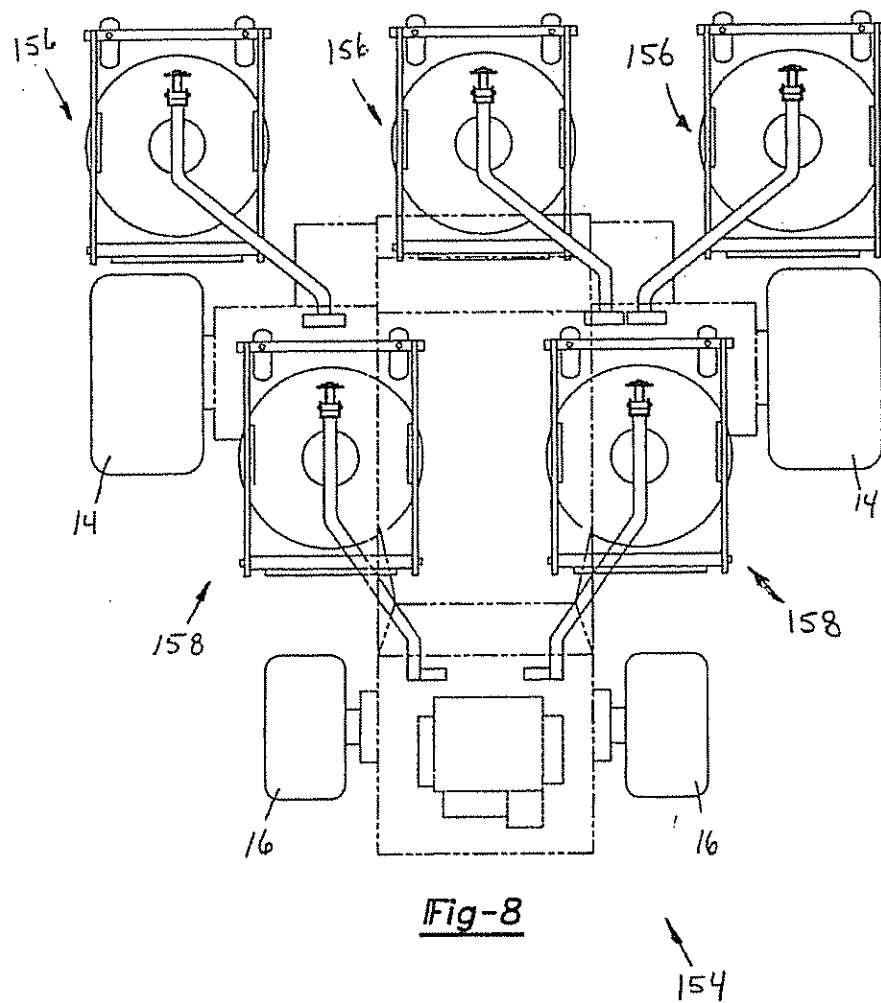
Fig. 6

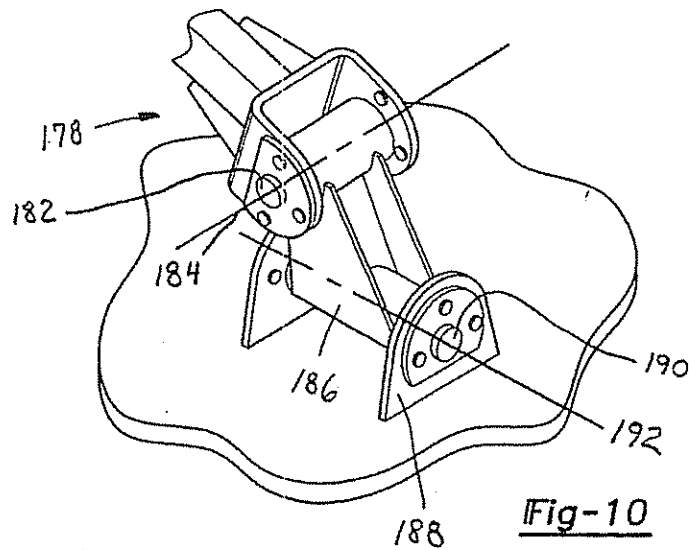
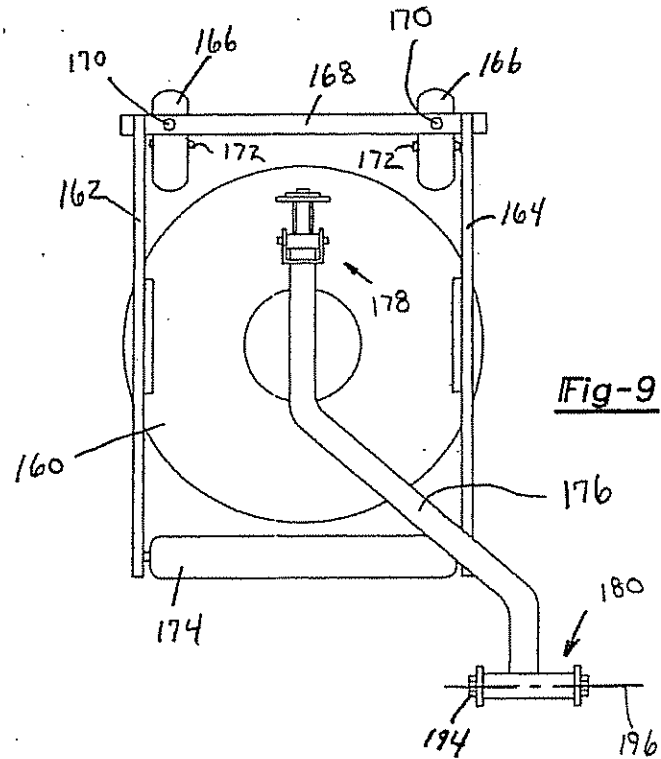






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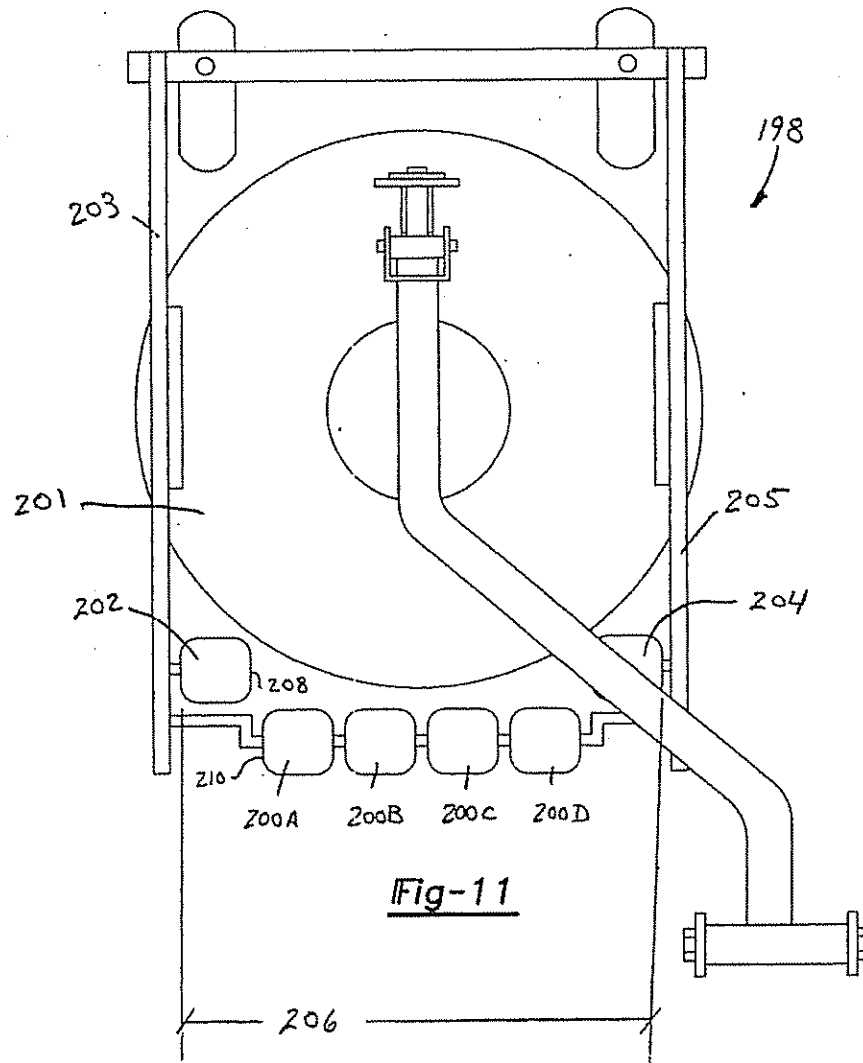




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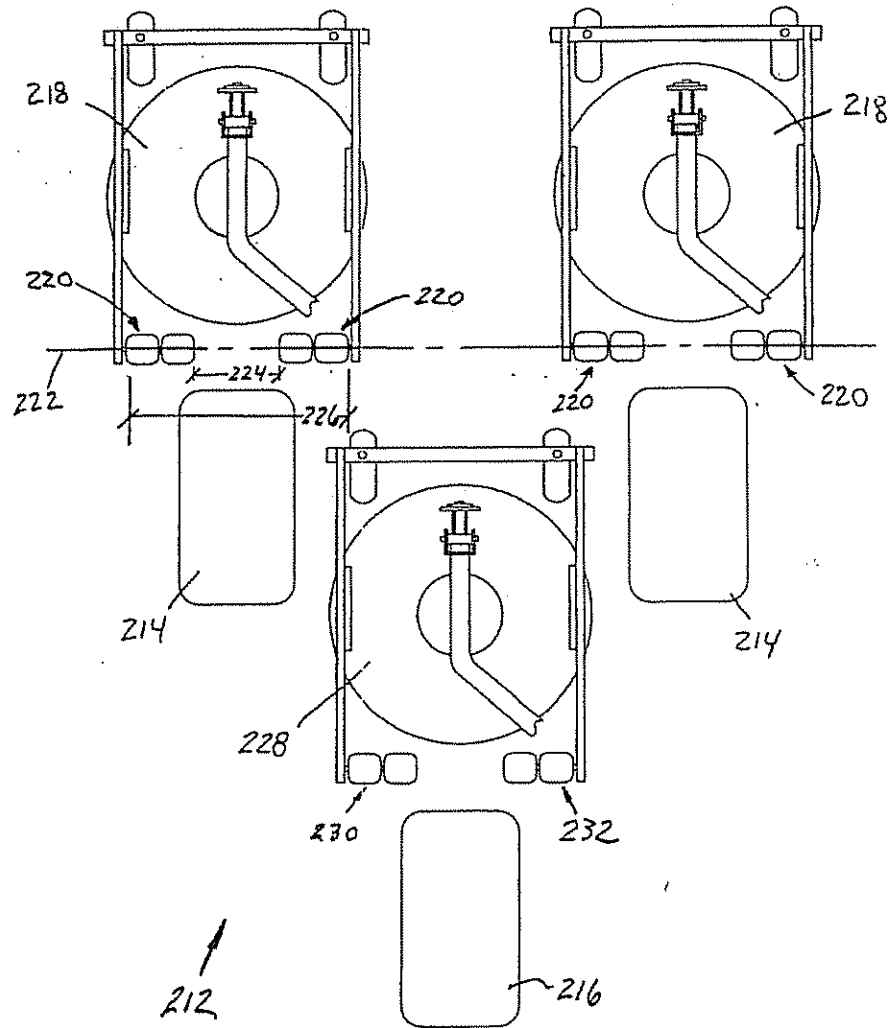


Fig-12

002280-26924960

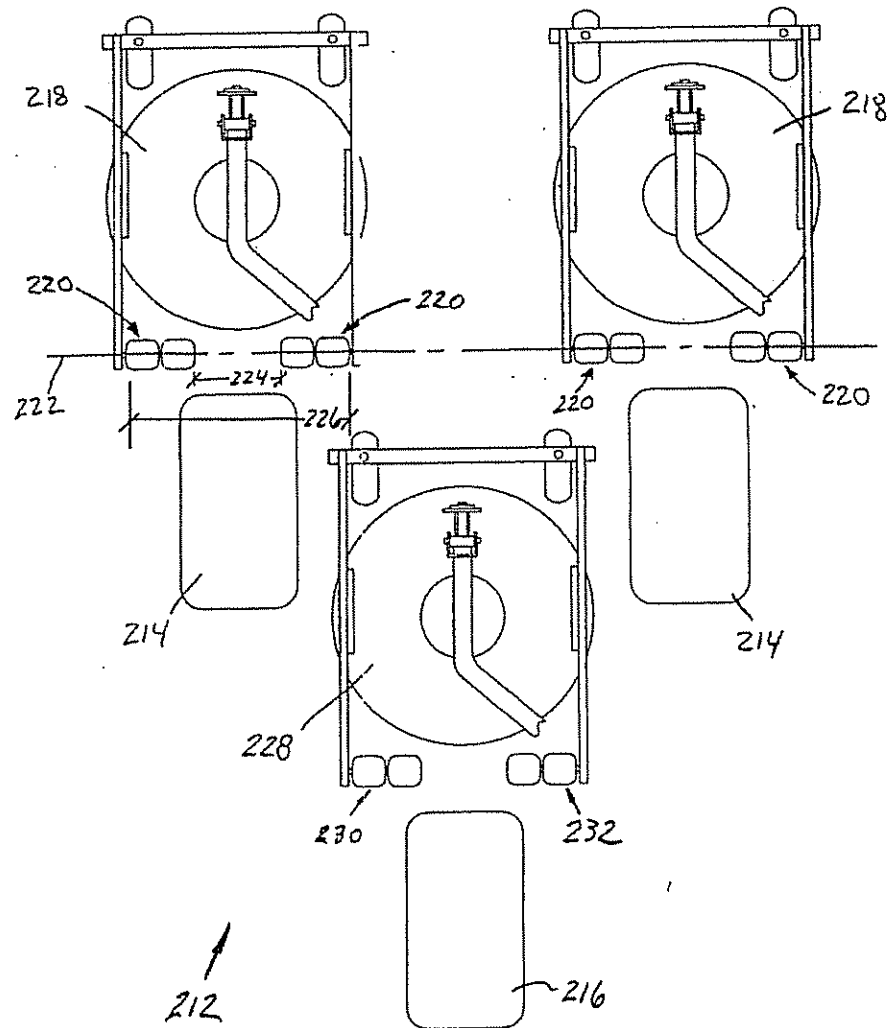


Fig-12

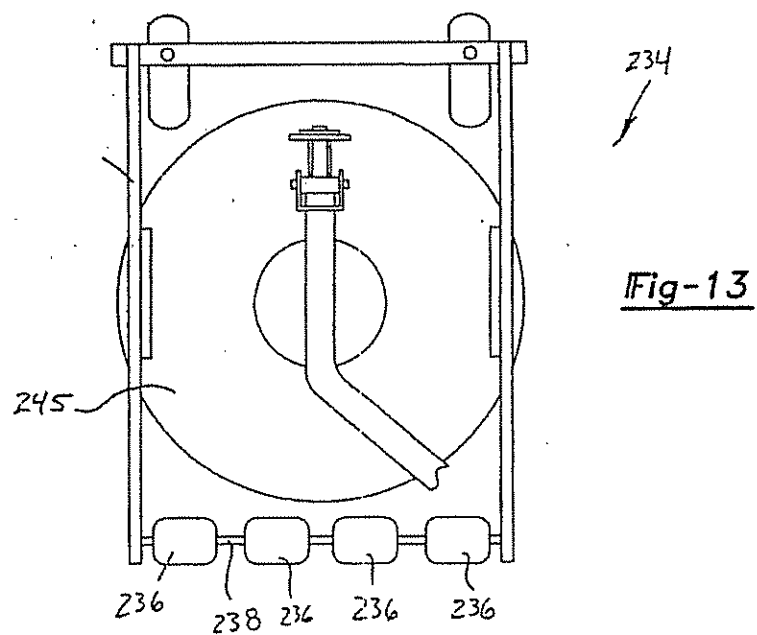
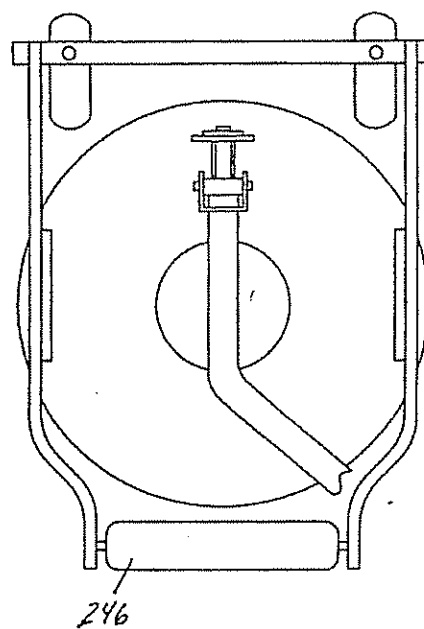


Fig-14



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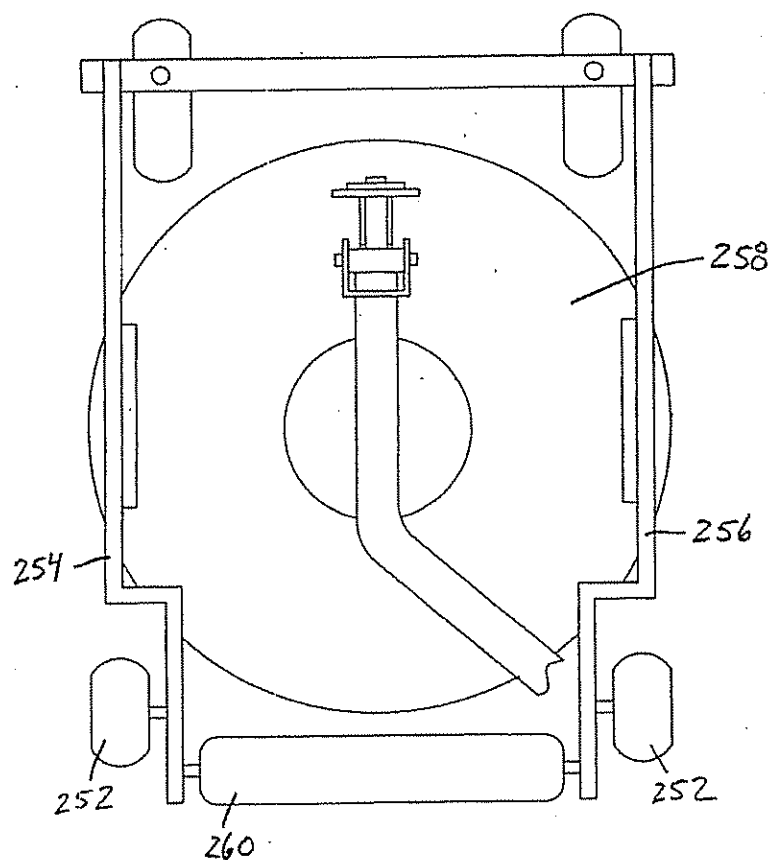
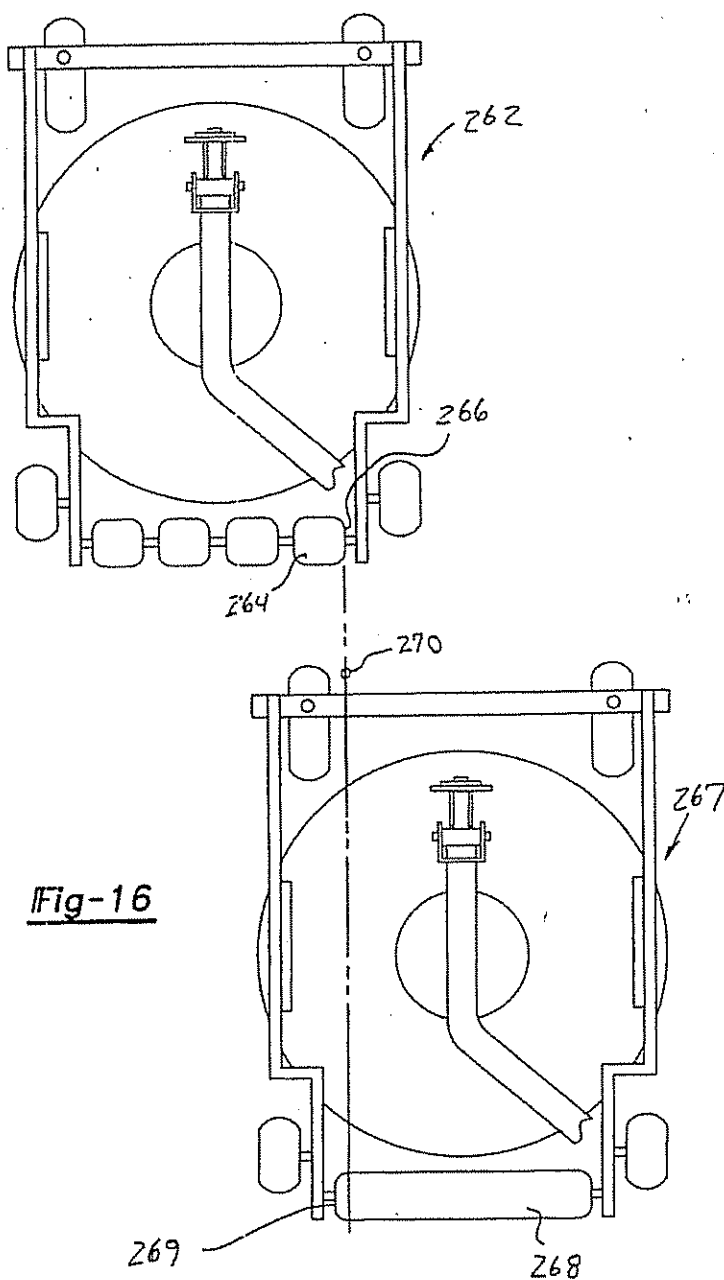


Fig-15

002280-2654560



09643597-082200

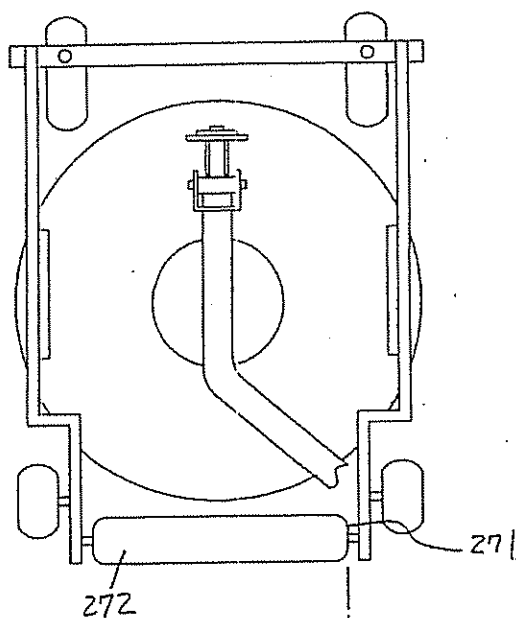
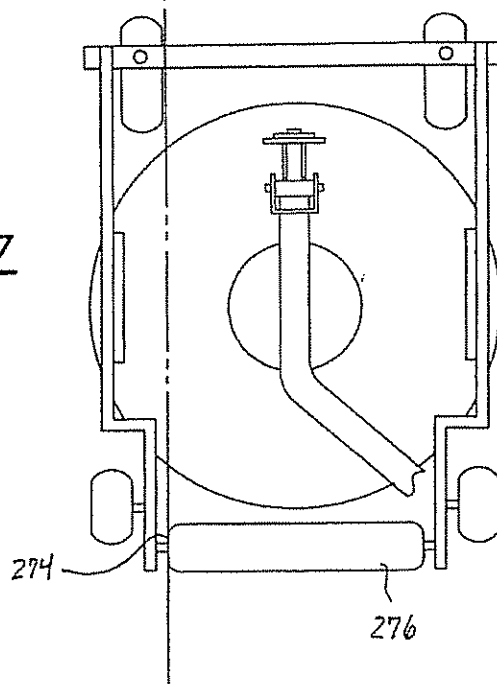


Fig-17



002280-26924960

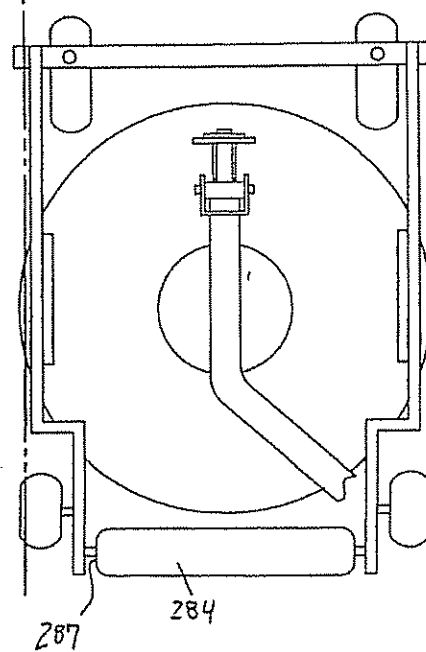
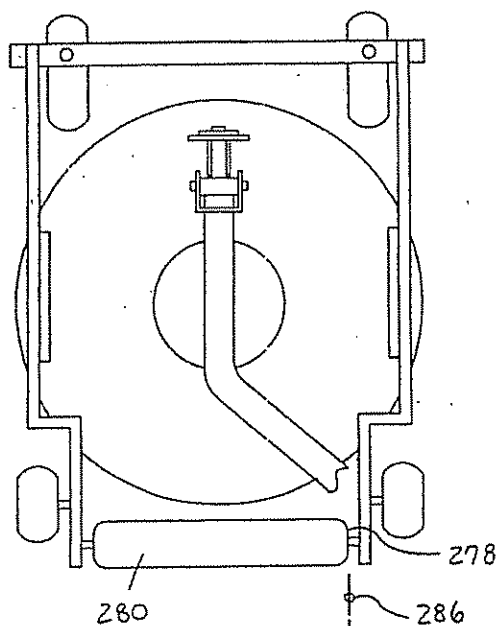


Fig-18



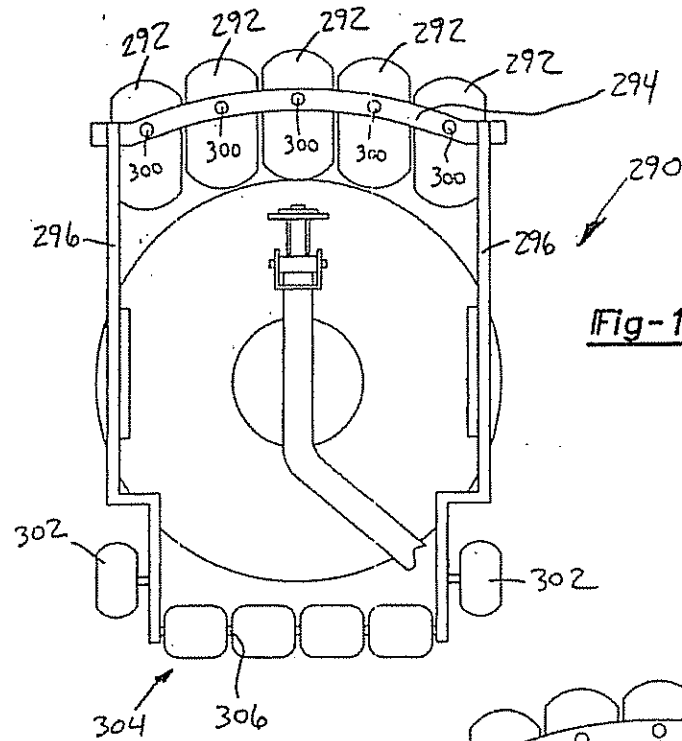
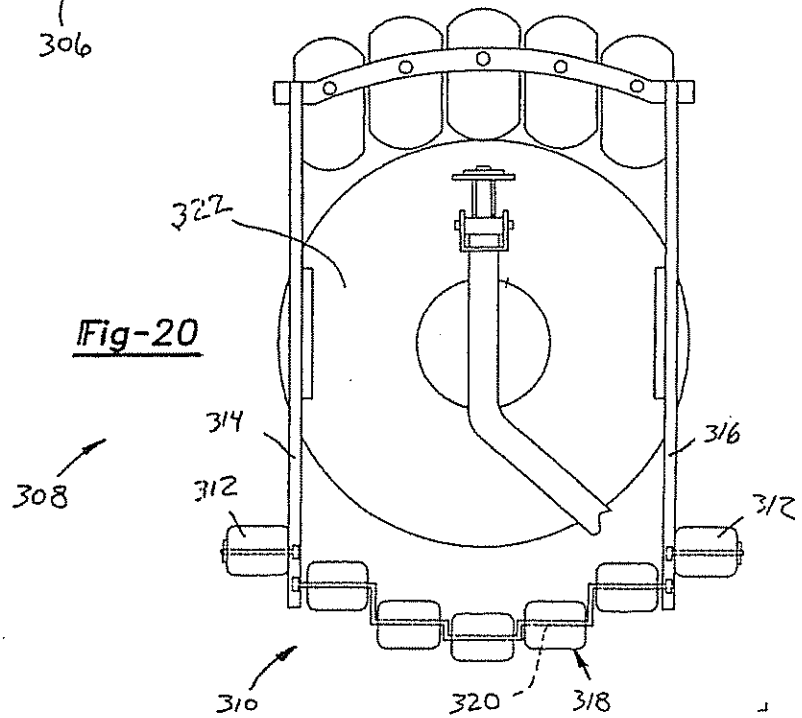


Fig-20



002280-20951960

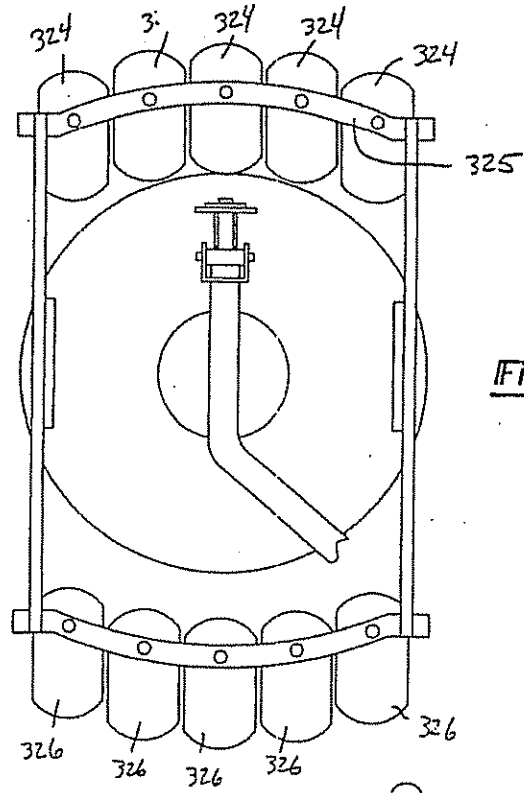


Fig-21

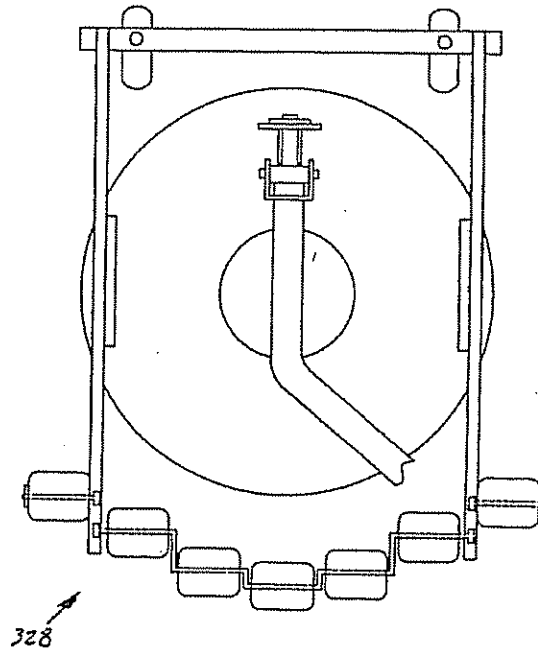


Fig-22

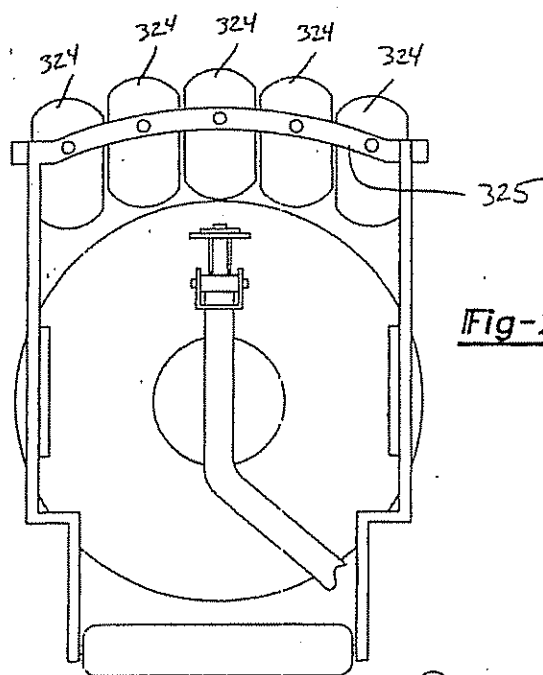


Fig-23

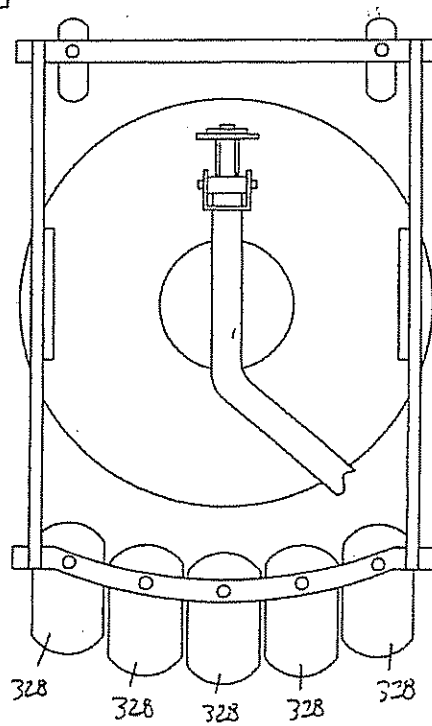


Fig-24

09543597-082200

**PART B—ISSUE FEE TRANSMITTAL**

Complete and mail this form, together with application fees, to: **Box ISSUE FEE**  
**Assistant Commissioner for Patents**  
**Washington, D.C. 20231**  
**11-28-01**

**MAILING INSTRUCTIONS:** This form ~~may~~ be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. Further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

**CURRENT CORRESPONDENCE ADDRESS** (Please Legibly make-up with any corrections or use Block 1)

**PM82/0928**  
**HARNESS DICKEY & PIERCE PLC**  
**PO BOX 828**  
**BLOOMFIELD HILLS MI 48303**

**Certificate of Mailing**  
 I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail ~~in accordance with the provisions of 35 USC 411~~ on the date indicated below.

**Joseph M. Lafata** (Depositor's name)  
*[Signature]* (Signature)  
**11/27/01** (Date)

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/643,697	08/22/00	027	PEZZUTO, R	3671 09/28/01

First Named Applicant: **BEDNAR,** 35 USC 154(b) term ext. = **0 Days.**

**TITLE OF INVENTION** **GANG-TYPE ROTARY LAWN MOWER WITH MULTIPLE REAR ROLLERS**

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2	7016R-000015	056-006.000	M74 UTILITY	NO	\$1240.00	12/28/01

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.333). Use of PTO form(s) and Customer Number are recommended, but not required.

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" indication form PTO/SB/47) attached.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

**HARNESS, Dickey & Pierce PLC**

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

**PLEASE NOTE:** Unless an assignee is identified below, no assignee data will appear on the patent. Indication of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE **TEXTRON INC.**

(B) RESIDENCE (CITY & STATE OR COUNTRY)  
**Providence, Rhode Island**

Please check the appropriate assignee category indicated below (will not be printed on the patent)

☐ Individual ☒ corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):

☒ Issue Fee

☒ Advance Order - # of Copies **10**

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The COMMISSIONER OF PATENTS AND TRADEMARKS IS requested to apply the Issue Fee to the application identified above.

(Authorized Signature) *[Signature]* (Date) **11/27/01**

**NOTE:** The Issue Fee will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

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PTOL-855 (REV.10-95) Approved for use through 06/30/99. OMB 0651-0033 Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

**JA - 0486**

PATENT APPLICATION FEE DETERMINATION RECORD Effective December 29, 1999					Application or Docket Number	
<b>CLAIMS AS FILED - PART I</b>						
(Column 1)		(Column 2)				
FOR	NUMBER FILED	NUMBER EXTRA				
BASIC FEE						
TOTAL CLAIMS	27	minus 20 =		7		
INDEPENDENT CLAIMS	3	minus 3 =				
MULTIPLE DEPENDENT CLAIM PRESENT						
* If the difference in column 1 is less than zero, enter "0" in column 2						
<b>CLAIMS AS AMENDED - PART II</b>						
(Column 1)		(Column 2)		(Column 3)		
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			
	Total	•	Minus	**	=	
	Independent	•	Minus	***	=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			
	Total	•	Minus	**	=	
	Independent	•	Minus	***	=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			
	Total	•	Minus	**	=	
	Independent	•	Minus	***	=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>						

SMALL ENTITY TYPE <input type="checkbox"/>		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
	345.00	OR		690.00
X\$ 9=		OR	X\$18=	1260
X39=		OR	X78=	
+130=		OR	+260=	
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X\$ 9=		OR	X\$18=	
X39=		OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDI- TIONAL FEE		RATE	ADDI- TIONAL FEE
X\$ 9=		OR	X\$18=	
X39=		OR	X78=	
+130=		OR	+260=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

FORM PTO-878  
(Rev. 12/99)

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

JA - 0487

SEARCHED			
Class	Sub.	Date	Exmr.
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	7		
	13.6		
	13.7		
	13.8		
	255		
	295		
	Dg 3		
	Dg 9-		
	Dg 14	9/24/01	Ⓢ

INTERFERENCE SEARCHED			
Class	Sub.	Date	Exmr.
56	6	9/24/01	Ⓢ
	13.6	9/24/01	Ⓢ

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	Date	Exmr.

(RIGHT OUTSIDE)

JA - 0488

## ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION	LU	68904	8/30/00
O.I.P.E. CLASSIFIER			
FORMALITY REVIEW		711576	10/11/00
RESPONSE FORMALITY REVIEW		711576	11/27/00

## INDEX OF CLAIMS

✓ ..... Rejected      N ..... Non-elected  
 = ..... Allowed      I ..... Interference  
 - (Through numeral).... Canceled      A ..... Appeal  
 + ..... Restricted      O ..... Objected

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JA - 0489

## PATENT APPLICATION



09643697

JC893 U.S. PTO

09/643697



08/22/00

 SED 70017  
 INITIALS

## CONTENTS

	Date Received (Incl. C. of M.) or Date Mailed		Date Received (Incl. C. of M.) or Date Mailed
1. Application <i>Print</i> papers.		42.	
2. <i>For Del Fee</i>	<i>10/12/00</i>	43.	
3. <i>Del</i>	<i>11/16/00</i>	44.	
4. <i>Pre Cont #</i>	<i>8/22/00</i>	45.	
5. <i>FD-5</i>	<i>09/15/01</i>	46.	
6. <i>Letter to Chief B</i>	<i>7/27/01</i>	47.	
7. <i>Notice Allow</i>	<i>9/26/01</i>	48.	
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JA - 0490



June 5, 1934.

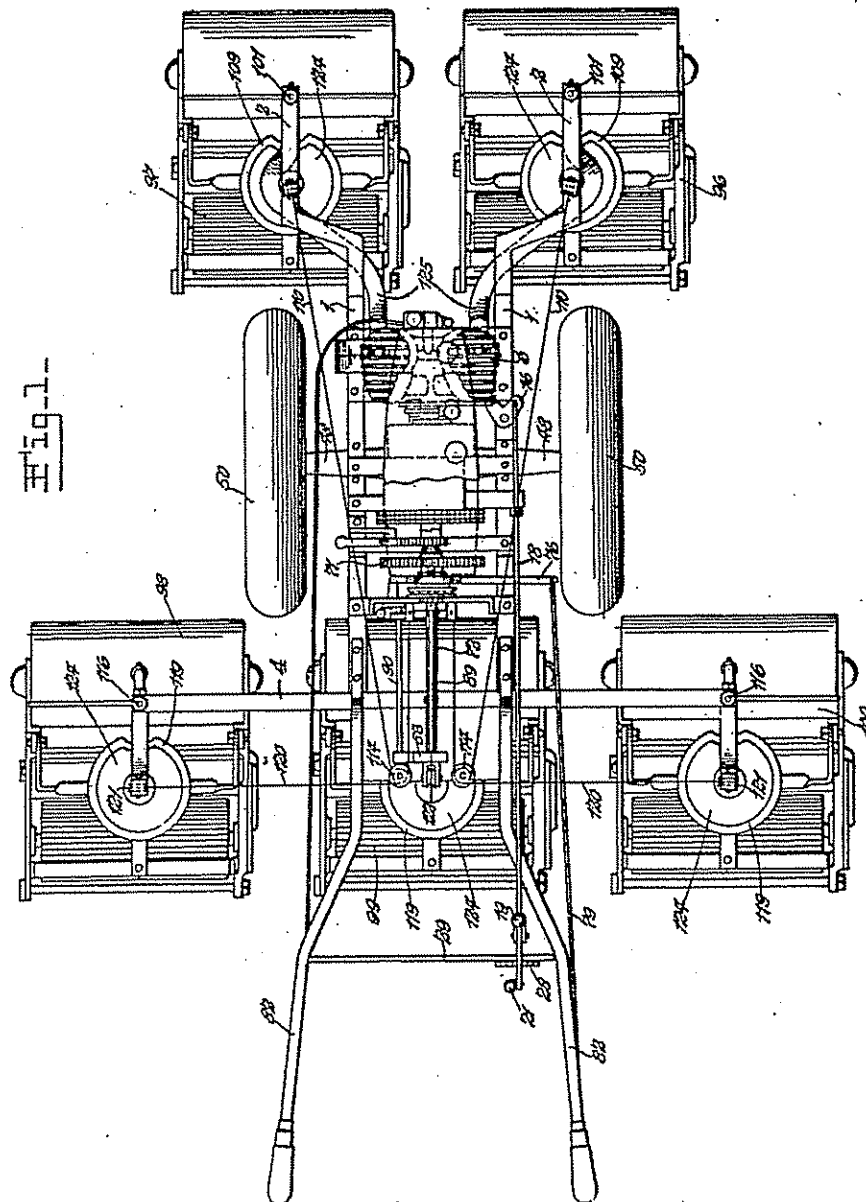
J. B. POL

1,961,710

GANG LAWN MOWER

Filed March 2, 1932

6 Sheets-Sheet 1



Inventor  
John B. Pol  
by Tippet & Stangland  
His Attorneys.

June 5, 1934.

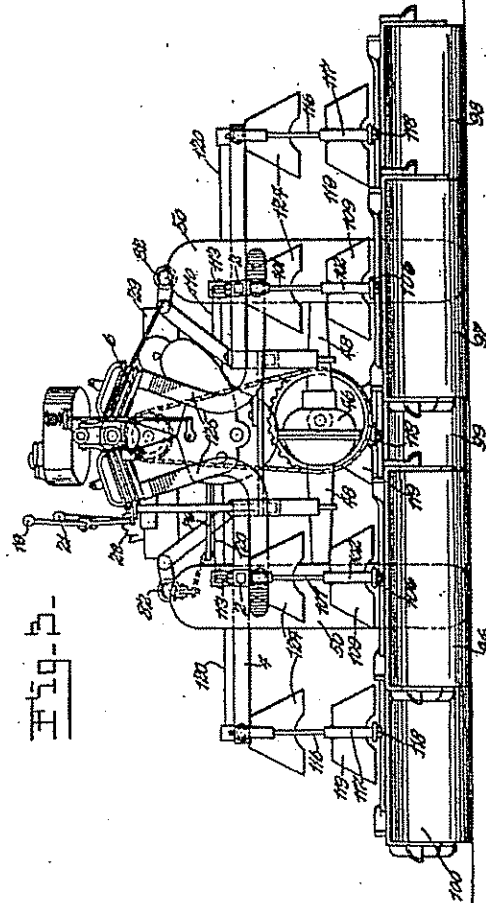
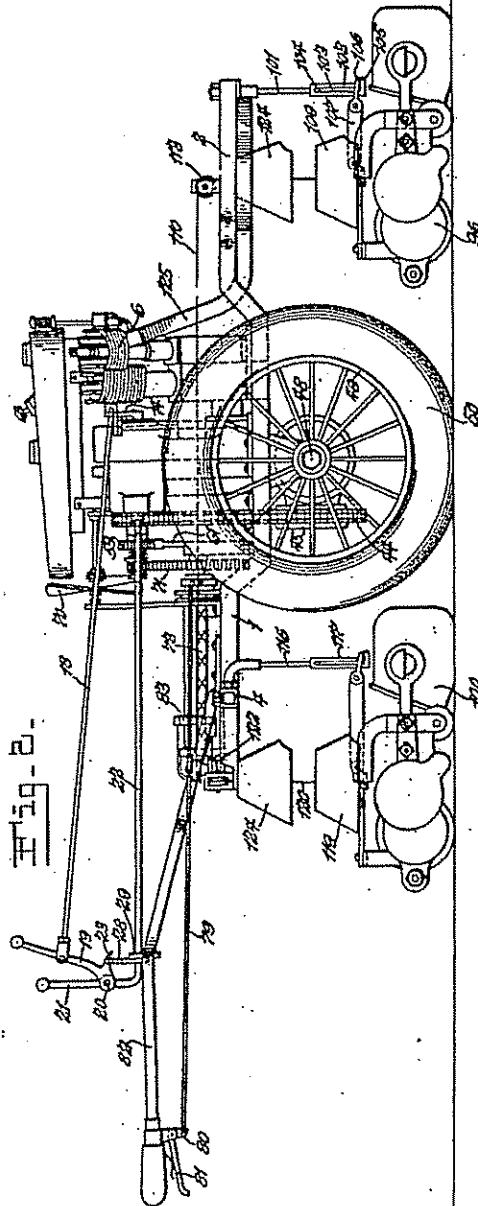
J. B. POL

1,961,710

GANG LAWN MOWER

Filed March 2, 1932

6 Sheets-Sheet 2



Inventor  
John B. Pol  
by Rippey & Kingsland  
His Attorneys.

June 5, 1934.

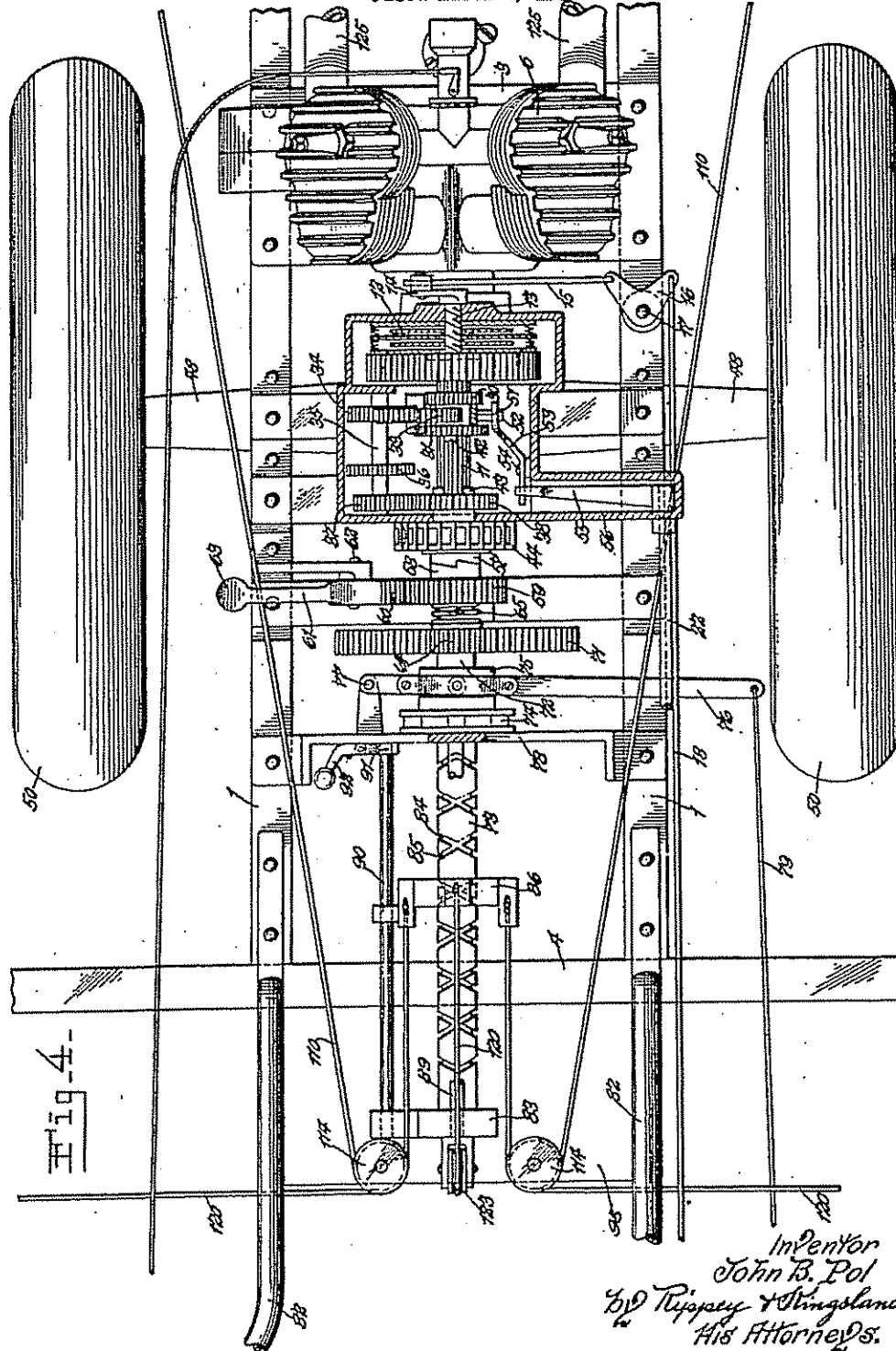
J. B. POL

1,961,710

GANG LAWN MOWER

Filed March 2, 1932

6 Sheets-Sheet 3



**June 5, 1934.**

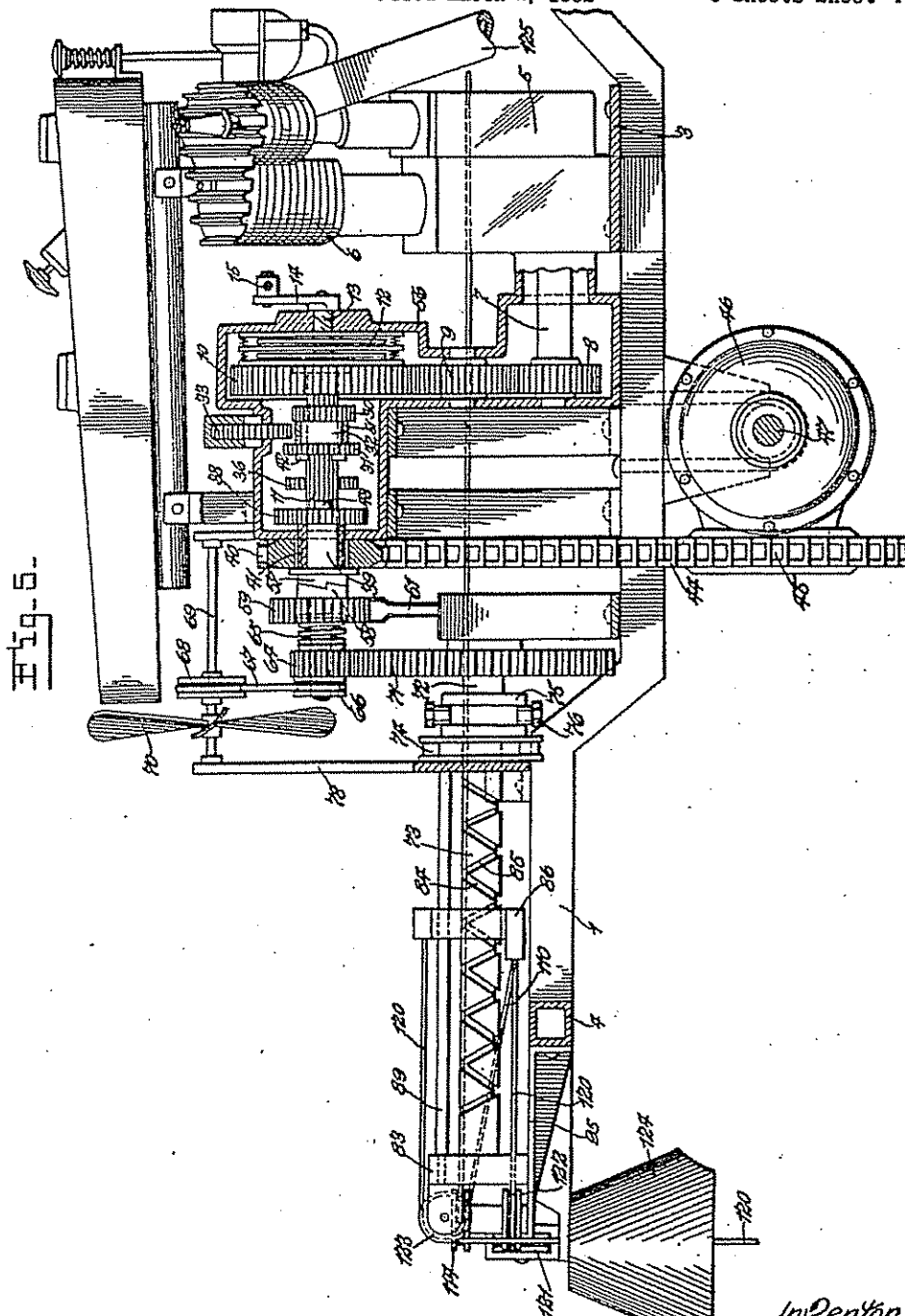
J. B. POL

1,961,710

GANG LAWN MOWER

Filed March 2, 1932

6 Sheets-Sheet 4



Indentor  
John B. Pol  
by Ripsey & Kingsland  
His Attorneys.

June 5, 1934.

J. B. POL

1,961,710

GANG LAWN MOWER

Filed March 2, 1932

6 Sheets-Sheet 5

Fig. 6.

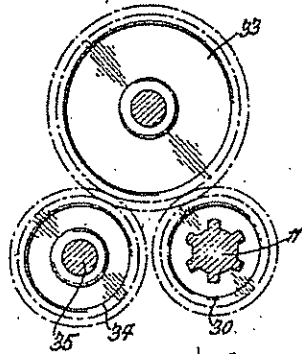


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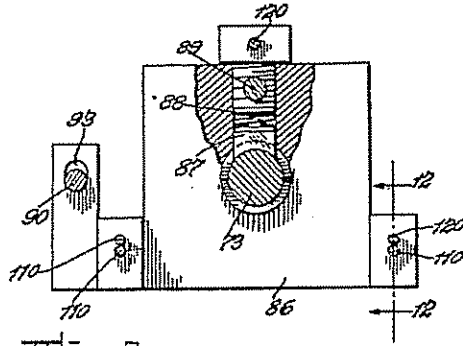


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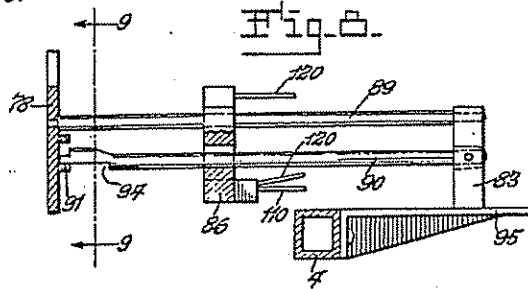


Fig. 9.

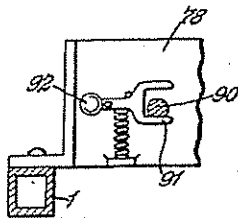


Fig. 10.

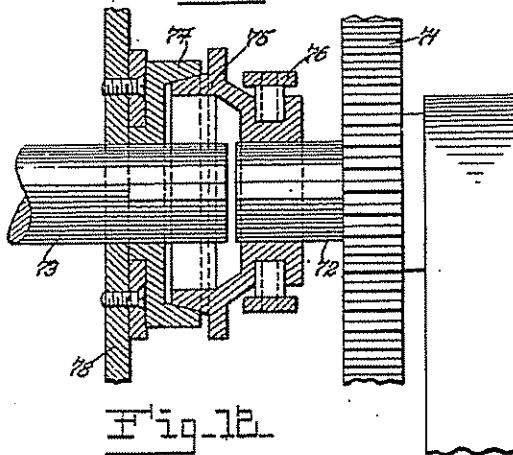
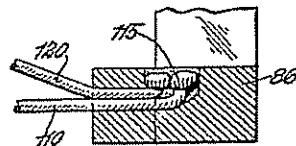
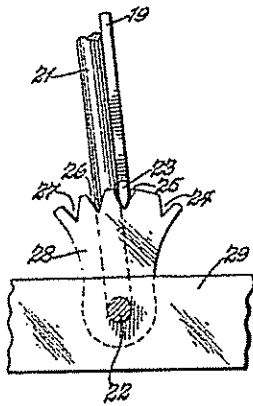


Fig. 11.



Inventor  
John B. Pol  
By Rippey & Kingland  
His Attorneys.

June 5, 1934.

J. B. POL

1,961,710

GANG LAWN MOWER

Filed March 2, 1932

6 Sheets-Sheet 6

Fig. 13-

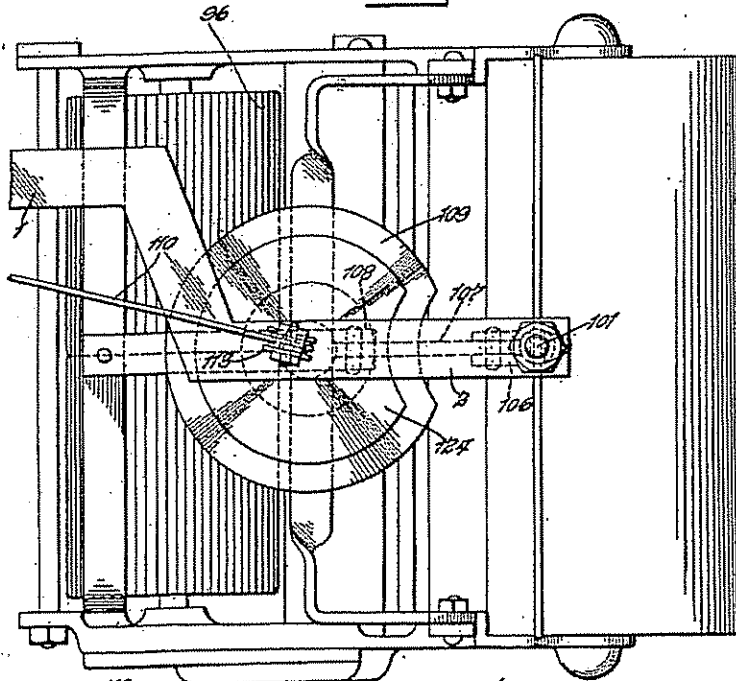


Fig. 15-

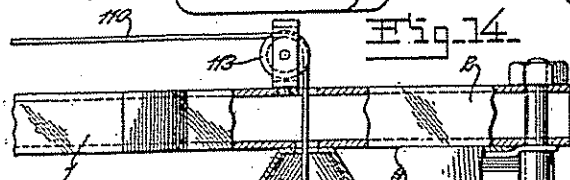
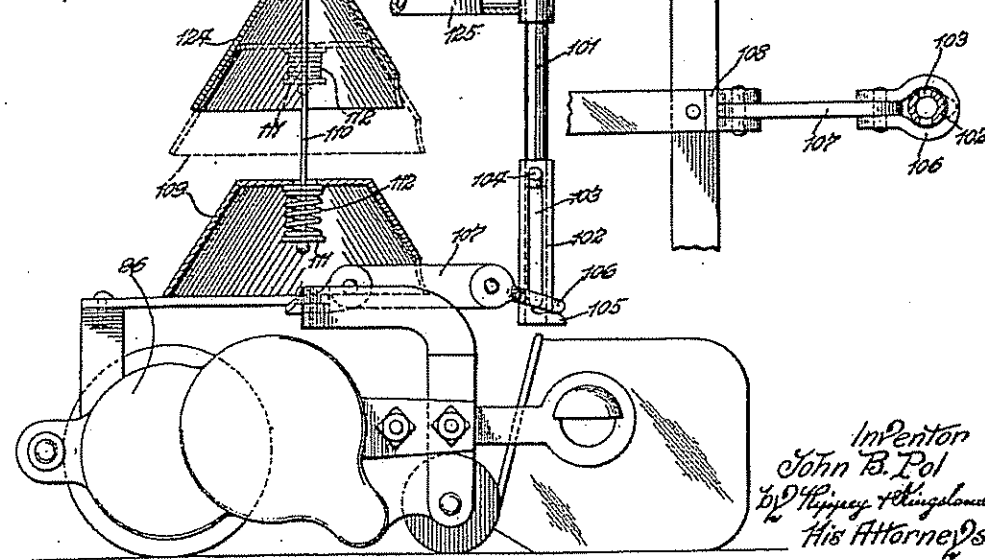


Fig. 14-



Inventor  
John B. Pol  
By *Wm. H. Kingland*  
His Attorneys



Patented June 5, 1934

1,961,710

## UNITED STATES PATENT OFFICE

1,961,710

## GANG LAWN MOWER

John Baptiste Pol, La Porte, Ind.

Application March 2, 1932, Serial No. 596,168

20 Claims. (Cl. 56-7)

This invention relates to gang lawn mowers, and has special reference to gang lawn mowers arranged, constructed and designed for efficient and satisfactory use on golf putting greens and also on the fairways of golf links.

Objects of the invention are to provide a machine adapted and designed for use on the putting greens and fairways of golf links including a supporting frame mounted on wheels provided with large elastic tires, a plurality of lawn mowers arranged in proper relationship to mow a wide strip or swath, and improved mechanism operated by the engine for raising and supporting the lawn mowers above the surface of the ground out of position for operation; to provide an engine or motor for propelling the machine and thereby operating the lawn mowers at selected speeds; to provide means for reversing the direction of travel of the machine and to support the lawn mowers out of position for operation during such reverse movement; to provide means in connection with the machine frame permitting the respective lawn mowers to adjust themselves to the surface of the ground over which they are traveling; and to provide means preventing substantial oscillation of the lawn mowers when they are suspended out of position for operation.

Various other objects and advantages will appear from the following description, reference being made to the accompanying drawings, in which—

Fig. 1 is a plan view of my improved gang lawn mower.

Fig. 2 is a side elevation.

Fig. 3 is a front elevation.

Fig. 4 is an enlarged plan view with parts in section showing the transmission gearing whereby the machine may be operated at different speeds in one direction and may also be propelled in the opposite direction at the option of the operator.

Fig. 5 is a vertical longitudinal sectional view through the center of the frame of the machine and through the transmission gearing.

Fig. 6 is a detail sectional view showing a part of the transmission gearing.

Fig. 7 is a sectional view showing a part of the mechanism for raising and lowering the lawn mowers.

Fig. 8 is a view showing the device for supporting the lawn mowers in elevated position.

Fig. 9 is a cross sectional view on the line 9—9 of Fig. 8.

Fig. 10 is an enlarged sectional view of the

clutch device controlling the raising and lowering of the lawn mowers by the motor.

Fig. 11 is a detail view of a part of the device for controlling the transmission gearing.

Fig. 12 is a sectional view on the line 12—12 of Fig. 7.

Fig. 13 is an enlarged plan view of one of the lawn mowers and its associated parts that are included in the present invention.

Fig. 14 is a vertical sectional view of these parts.

Fig. 15 is a detail view showing the connection or coupling device for operating a lawn mower by the frame of the machine.

The frame of the machine includes a pair of longitudinal side members 1 having their forward ends extended outwardly and forwardly to provide end portions 2. These side frame members are rigidly connected by an engine support 3 and rearwardly therefrom by a strong transverse frame member 4. The crank shaft case 5 of a motor 6 is mounted on the support 3. This motor may be of any appropriate construction and type, different types of motors adapted and suitable for this purpose being available. The motor crank shaft 7 (Fig. 5) is rotated by the motor in the usual manner and is equipped with a gear wheel 8 meshing with an intermediate gear 9 that is in mesh with a gear wheel 10 supported on a transmission shaft 11. The transmission shaft 11 supports the variable speed and reverse gears and rotation of said shaft 11 by the gear 10 is controlled by a clutch mechanism 12 conventionally shown in Figs. 4 and 5. Thus when the clutch mechanism 12 is set or closed, the shaft 11 will be rotated by the gear 10; and when the clutch mechanism 12 is released or open, the gear 10 may be rotated by the motor without rotating the shaft 11. The details of this clutch mechanism constitute no part of the present invention, such clutch mechanism being known and available on the market and the effect of this closing and opening being familiar. The clutch mechanism, as is well known, is mounted on a screw shaft 13 which may be turned in one direction to set or close the clutch and in the opposite direction to open or release the clutch in the usual way. A crank 14 is attached to the shaft 13 and is connected by a link 15 with one arm of a bell crank lever 16 supported on a post 17 rigid with one of the frame members 1. The front end of a link 18 is pivoted to the other arm of the bell crank lever 16 and the rear end of said link 18 is pivoted to a lever 19 having its lower end mounted on a pivot 20 supported by the upwardly extended lever arm 21 in rigid connection with the

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rear end of a rock shaft 22. The lever 19 is provided with a projection 23 (Figs. 2 and 11) designed and adapted to be engaged selectively in any one of the notches 24, 25, 26 and 27 in the upper edge of a latch plate 28 rigidly attached to a support 29.

A pair of gears 30 and 31 are rigid with a sleeve 32 mounted for sliding movements on and along the shaft 11. The gear 30 is movable into and out of mesh with an intermediate gear 33 (Fig. 5) that is in constant mesh with a gear 34 attached to a shaft 35 (Fig. 4). When the motor is running and the gear 30 meshes with the gear 33, the machine is driven rearwardly.

The gear 31 is movable into and out of mesh with a gear 36 rigid on the shaft 35. When the motor is running and the gear 31 is in mesh with the gear 36, the machine is propelled forwardly at first or low speed. The gears 34 and 36 are spaced so that the gear 30 is out of mesh with the gear 33 when the gear 31 is in mesh with the gear 36 and vice versa. A gear 37 attached to the shaft 35 is in constant mesh with a gear 38 rotative on a sleeve 39 loosely mounted on the shaft 11. A sprocket wheel 40 is attached to the hub 41 of the gear 38. Thus the gear 38 and the sprocket wheel 40 are rotative independently of the shaft 11 and vice versa, because said gear 38 and said sprocket wheel 40 are both rigid with the sleeve 39, which is loose on said shaft 11. The gear wheel 31 is equipped with a clutch 42 and the gear 38 is provided with a cooperating clutch member 43 designed and adapted to be engaged by the clutch member 42 when the gears 30 and 31 are moved far enough along the shaft 11 to effect such engagement, in which position said gears 30 and 31 are out of engagement with the gears 33 and 36. Thus the shaft 11 may be rotated without rotating the shaft 35 and without rotating the gear 38 or the sprocket wheel 40.

A chain 44 engages the sprocket wheel 40 and a sprocket wheel 45 geared in any known or appropriate manner to a known differential gearing in a housing 46. I utilize a conventional and available differential gearing and, since many types of such differential gearings are now well known, general reference thereto is sufficient for present purposes because anyone skilled in the art will understand the present invention without specific illustration and description of the differential gearing. This differential gearing drives axle shafts 47 (Fig. 5) enclosed in axle housings 48 extending from opposite sides of the housing 46 and connected with supporting wheels 49. Thus the wheels 49 are rotated whenever the gear 38 is rotated. The relatively large pneumatic tires 50 are mounted on the wheels 49 and should be only partially inflated when used upon putting greens of golf links or elsewhere on soft ground.

A collar 51 is mounted on the sleeve 32 and has a lateral projection 52 extending into a slot in one end of a lever 53 (Fig. 4). The lever 53 is pivoted on a support 54 and has its opposite end engaged by an arm 55. The arm 55 is attached to the rock shaft 22 mounted for rocking movements in the support 29 and in the housing 56 which encloses the variable speed gearing and the arm 55 and the lever 53. The lever 53 is mounted in an inclined position in which the end that engages the arm 55 is below the end that engages the projection 52.

In Figs. 4 and 5, the gears 30 and 31 are shown in neutral position out of engagement with all other gears. In this position, the projection 23 is engaged in the notch 24. Turning of the rock

shaft 22 to engage the projection 23 in the notch 25 places the gear 30 in mesh with the gear 33, thereby operating the transmission and differential gearings to propel the machine rearwardly. Turning of the shaft 22 to place the projection 23 in the notch 26 moves the gears 30 and 31 to position in which the gear 30 is out of engagement with the gear 33 and the gear 31 is in engagement with the gear 36, thus propelling the machine forwardly at low speed. Further turning of the shaft 22 to position in which the projection 23 is engaged in the notch 27 moves the gears 30 and 31 out of engagement with all other gears and engages the clutch member 42 with the clutch member 43, thereby propelling the machine forwardly at the highest speed attainable by this gearing.

A clutch member 57 on the sleeve 39 (Figs. 4 and 5) is engaged by a clutch member 58 rigid with the gear wheel 59 attached to the shaft 11. A gear segment 60 is formed on the inner end of the lever 61 pivoted on the support 62 and is normally held out of engagement with the gear wheel 59 by an actuator comprising the lever 61 and the weighted portion 63 thereof. The outer end of the lever 61 constitutes a handle, whereby said lever may be raised and quickly operated to turn the wheel 59 and thereby the shaft 11 and thereby through the clutch 12 and gearing 10, 9, 8 rotate the motor crank shaft 7 to crank and start the engine.

A gear wheel 64 is mounted on the front end of the shaft 11 and is engaged by a spring 65 mounted between the gears 59 and 64. The gear 64 is thus pressed into frictional engagement with a belt pulley 66 attached to the shaft 11 and by such frictional engagement is caused to rotate with said shaft 11 until excessive resistance is encountered to prevent said frictional engagement from rotating said gear 64. When the resistance opposing rotation of the gear 64 exceeds a predetermined degree and overcomes the frictional grip of the gear 64 with the pulley 66, said gear 64 will remain stationary while the shaft 11 continues to rotate. A belt 67 connects the pulley 66 with a pulley 68 on a shaft 69 that supports a cooling fan 70 for the motor. Thus the cooling fan 70 is operated whenever the shaft 11 is rotating irrespective of whether the gear 64 is rotating or not.

The gear 64 meshes with a gear 71 keyed on a shaft 72 in axial alignment with a shaft 73 having a clutch member 74 keyed thereon (Fig. 10). A cooperating clutch member 75 is keyed or splined for sliding movements along the shaft 72 and is movable into and out of clutching engagement with the clutch members 74, thus providing optional means for rotating the shaft 73 by the engine. A lever 76 has one end mounted on a pivot 77 supported by the frame member 78 and the opposite end connected with the rear end of a link 79. The front end of the link 79 is pivoted to one arm of a bell crank lever 80 (Fig. 2) actuated by a spring 81 in a direction to move the link 79 and thereby the connected end of the lever 76 rearwardly. The lever 76 engages the clutch member 75 (Figs. 4 and 10), so that rearward swinging movement of the lever 76 by the spring 81 will disengage the clutch member 75 from the clutch member 74 and leave the shaft 73 stationary while the shaft 72 continues to rotate. The clutch 74—75 is a friction clutch and will slip, thus cooperating with the slip gear 64 to provide a yielding mechanism for rotating the shaft 73 by the motor. This yielding mechanism will yield or slip when a predetermined resistance against the shaft 73 is created.



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Each of the frame members 1 supports a rearwardly extended handle 82 whereby the machine may be properly guided and controlled. The bell crank lever 80 is pivotally supported by one of these handles 82 (Fig. 2), so that manipulation of said bell crank lever may be quickly and conveniently performed.

The rear end of the shaft 73 is supported by the frame member 78 and the front end of said shaft is supported by a frame member 83. The shaft 73 is formed with a spiral groove 84 in its periphery intersecting an opposite spiral groove 85, and these spiral grooves are connected at their ends (Fig. 4). A block 86 has a hole through which the shaft 73 extends. A detent 87 (Fig. 7) is mounted in the block 86 and is caused to engage in the grooves 84 and 85 by a spring 88. Accordingly, when the shaft 73 is rotating, the detent 87, being engaged in the groove 84 for instance, the block 86 will be moved toward one end of the shaft 73 until the detent 87 passes into the groove 85 and then the block 86 will be moved toward the opposite end of the shaft 73 because the detent 87 moves along the groove 85. When the block 86 reaches the opposite end of the shaft 73, the detent 87 will reenter the groove 84 and be operated along said groove. A rod 89, supported by the frame members 78 and 83, extends through a hole in the block 86 and assists in preventing said block 86 from turning with the shaft 73.

A rod 90 (Figs. 4 and 7) has its front end swiveled to the support 83 and its rear end mounted in the fork 91 of a lever 92 pivoted on the support 78. This rod 90 extends through a slot 93 (Fig. 7) in the block 86. The rear end of the rod 90 has a notch 94 (Fig. 8) adapted to receive the block 86. The lever 92 is weighted on its end opposite the fork 91 and normally supports the rod 90, so that the block 86 cannot engage in the notch 94. When the free end of the lever 92 is raised, thereby lowering the fork 91, the rod 90 is thereby lowered so as to permit the block 86 to enter the notch 94 and thus positively latch or lock the block 86 against movement along the shaft 73. This holds the shaft 73 from rotation irrespective of whether the clutch 74-75 is closed or not, because said clutch is of the slip friction type. Moreover, the spring 65 will permit the gear 64 to remain stationary while the shaft 11 continues to rotate.

The support 83 is rigid on a supporting plate 95 attached to the frame member 4.

My invention comprises means for operating a pair of lawn mower units 96 and 97 at the forward end of the frame and for operating a series of lawn mower units 98, 99 and 100 at the rear of the frame. The front end portion 2 of each frame member 1 rigidly supports a vertical mast 101. A sleeve 102 is mounted for vertical sliding movements along each mast 101, said sleeves having slots 103 receiving lugs 104 projecting from the masts, thus permitting sliding movements of the sleeves and holding the sleeves from turning. The lower end of each sleeve 102 has a shoulder 105 (Fig. 14) supporting a loop 106 through which the sleeve 102 extends. The loop 106 is pivoted to the front end of a link 107, the rear end of which is pivoted to a frame member 108 of the corresponding lawn mower unit. Thus these lawn mower units 96 and 97 at the front are operated whenever they are on the ground and the machine is traveling forwardly. This pivotal connection of the lawn mower units with their operating devices 102 and 101 permits the lawn mowers to tilt or incline relatively as

required by any irregularities in the surface of the ground over which they are operating.

Each of the lawn mower units 96 and 97 is rigid with a conical centering member 109. A flexible connection 110 extends through a hole in the top of each member 109 and has its lower end connected to a support 111 for a spring 112. Thus the spring 112 is mounted between the support 111 and the upper end of the conical member 109. The flexible connections 110 extend upwardly through the frame parts 2, over pulleys 113 and thence rearwardly against pulleys 114 (Figs. 1 and 4) and forwardly to connection with the block 86. This connection with the block 86 may be obtained by forming knots or heads 115 on the ends of the cables 110 and engaging said knots with the block 86 in a manner indicated in Fig. 12.

The frame member 4 supports a series of vertical masts 116 corresponding to the lawn mowers 98, 99 and 100, respectively. The lawn mowers 98, 99 and 100 are connected with their corresponding masts by sliding sleeves 117 and pivoted link connection 118 exactly like the sliding sleeve and pivoted link connection for the lawn mower units 96 and 97. Each of the lawn mower units 98, 99 and 100 rigidly supports a conical centering member 119 connected with the lower ends of cables 120, two of which pass upwardly over pulleys 121 and thence against pulleys 122 (Fig. 2) to connection with the block 86. The conical centering member 119 that is rigid with the middle lawn mower 99 passes upwardly against a pulley 123 (Figs. 2, 4 and 5) and thence forwardly to connection with the block 86.

It is now clear that when the block 86 is toward the rear and adjacent to the support 83, all of the cables 110 and 120 are relaxed and all of the lawn mower units can operate on the ground. When the block 86 is moved forwardly along the shaft 73, all of these cables are simultaneously tightened and all of the lawn mowers are lifted or raised above the surface of the ground. This permits the machine to be turned easily or otherwise propelled and controlled, it being apparent that the transmission gearing may be rendered inoperative or not as desired while the engine is running.

Conical holders 124 are rigidly attached to the frame of the machine above the respective members 109 and 119 in position to receive said members when the lawn mower units are raised above the ground in the manner described. The conical members 109 and 119 extend into the centering and holding members 124, so that the various lawn mower units are thereby held from oscillation and vibration during the travel of the machine.

Exhaust pipes 125 from the motor or engine extend forwardly and open adjacent to the masts 101 and serve to lubricate said masts to facilitate the movement of the sleeves 102 along said masts.

To start the motor, the shaft 22 is rocked to place the gears 30 and 31 out of engagement with all other gears. Then the motor 6 is operated to cause the gear segment 60 to turn the gear 59 and thereby rotate the shaft 11 and operate the gearing 10, 9, 8 and rotate the crank shaft 7 to crank and start the engine. The ignition system for the engine is not shown because it is of conventional and well known type. After the engine has been started, the lever 61 assumes a position in which the gear segment 60 is out of engagement with the gear 122